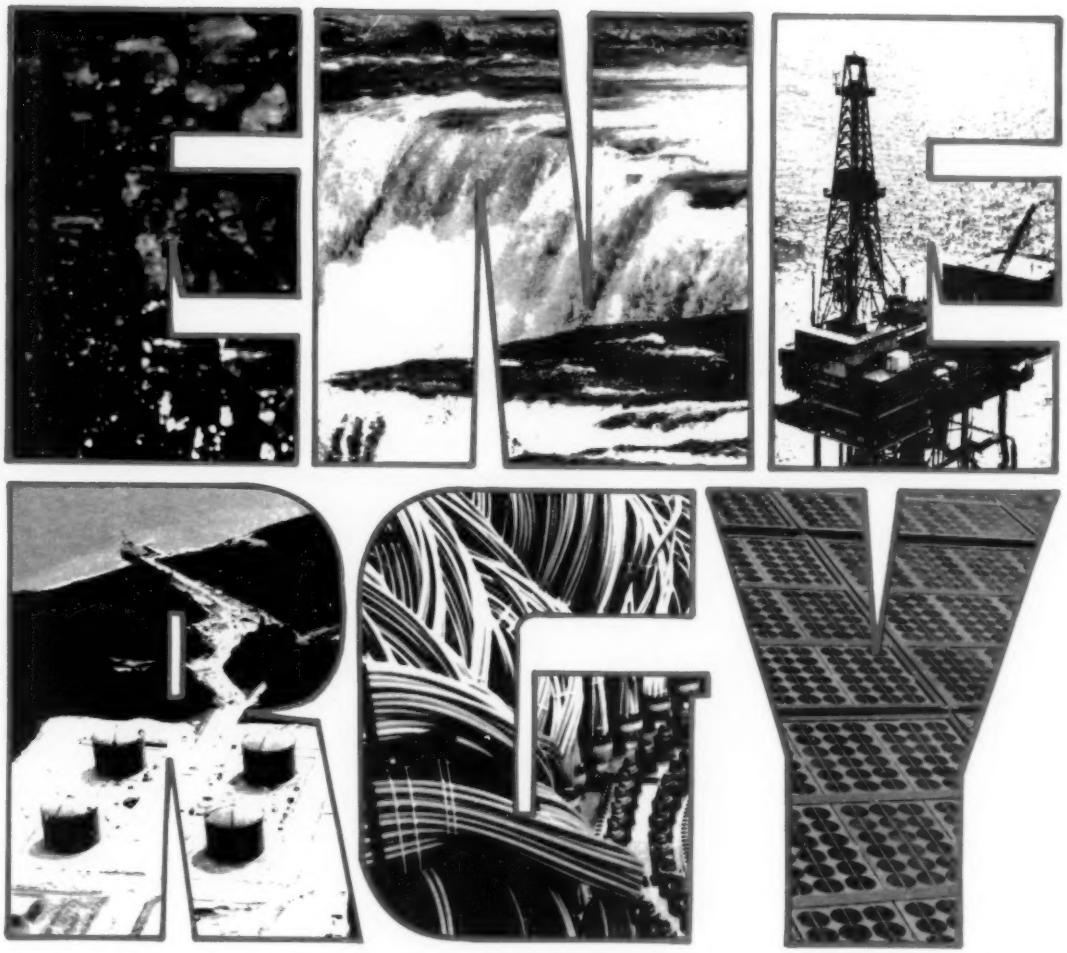
COMMERCE AMERICA

U.S. Department of Commerce / April 11, 1977



FACING THE HARD FACTS

Newsmemo

How significant are exports in the total U.S. economy? New York banker George D. Cashman supplies this perspective: "At $114.8 billion in 1976 . . . almost as large as business-fixed investment and twice as large as expenditures on housing! Further, U.S. exports grew at an annual rate of 11 percent during the period 1954-74 with a corresponding growth in related highly productive employment." Cashman put this summary before Congress on behalf of the U.S. Chamber of Commerce, which is recommending increased capitalization for the Eximbank and more attention to export financing for sales to the developing nations.

The international economy is displaying an underlying resilience. So believe the trade specialists of the GATT Secretariat in Geneva. They submit this broad—and hopeful—view: "It is worthy of note that less than two years after the low point of the worst recession in 40 years, the volumes of industrial production and world trade have surpassed their previous peaks, and the average inflation rate in the OECD area (24 major industrial nations) continues to diminish. Furthermore, in the face of unprecedented strains, a general retreat into protectionism was avoided, which in turn permitted trade to lead the recovery."

The index of demand for scientists and engineers has shown good recent strength. Beginning last May it stayed above 100 through 1976, reversing a trend that had it below 100 for 19 months. The scale reflects employment rates derived from help-wanted ads in selected trade publications, using 1961 figures as the benchmark. The level for December was 115, compared with 68.6 for December 1975 and 80.1 for December 1974. Yearly averages show: 101.7 in 1976, 74.4 in 1975 and 90.5 in 1974.

Trend-spotters are looking at the increased bookings of materials handling equipment makers. Such bookings for December were at $199 million, about 24 percent above the December 1975 total, according to the Materials Handling Institute. Total 1976 bookings were 21 percent below the record year of 1974 but 24 percent above 1975. Since orders for materials handling equipment are generally placed when industry anticipates increased production, the rise in capital outlay points to optimism on future demand for products.

Lead-using industries are currently making their responses to new federal safety/health standards. The proposals of the Occupational Safety and Health Administration regarding workplace rules could cost U.S. firms from $550 million to $1.3 billion, according to OSHA estimates. The agency expects employee productivity to decline, due to the proposed safeguards, as follows: primary and secondary smelting and refining, 10-14 percent; storage batteries, 9-11 percent; brass and bronze foundries, 22 percent, and inorganic pigment producers, 2 percent. Several smelting and battery-making operations may not be able to survive the added production costs under the new standards, it is believed.

Emission of benzene vapors raises problems in relation to dispensing of unleaded gasoline. The vapors, it is contended, are a possible cause of leukemia. There are proposals to revise safety standards from 10 parts per million maximum exposure to 1 part per million. Atmospheric benzene concentration at the gas pump exceeds such a revised standard. Costs of limiting emissions along the way to the users' tanks could range from $300 million up to $4.5 billion for a "minimum feasible" level. The latter cost would amount to about one-half cent per gallon. An alternate method would be to reduce benzene concentration at the refinery. Major refiners can probably do this with their present equipment, but the small independents would be severely affected.

France and Japan, committed to building up their local computer industries, may be getting together to do so. At present U.S. firms have 85 percent of France's mainframe computer business and 40 percent of Japan's, while holding on to 95 percent of the big American market. Japan is embarking on a major program to develop and refine large-scale integrated circuits for use in future computers. The French have reportedly proposed to the interested Japanese a cooperative development effort in this field. France has offered to trade its state-of-the-art fabrication technology, critical in making these circuits, for Japanese information on other aspects of large-scale circuit production.

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COVER: Realistic views of the U.S. energy picture by officials of government and industry is the subject of the story beginning on page 4 as the nation anticipates the President's national energy program which is to be unveiled later this month.

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Stronger Growth Expected To Bring Only Modest Rise In Interest Rates

This article was prepared by Dr. Courtenay Slater, Commerce Chief Economist, in collaboration with H. Kemble Stokes, Jr., staff economist.

Dr. Slater

In dramatic contrast to previous periods of economic recovery, interest rates have declined markedly during the past two years. This has, of course, reflected the reduction in the inflation rate from 10.0 percent in 1974 to 5.1 percent in 1976. Recent movements in interest rates have also reflected the disappointingly low rates of real economic growth that have persisted over the past year.

President Carter's economic stimulus program is expected to provide a boost to the rate of real economic growth, and faster growth will be accompanied by stronger credit demands. Increases in interest rates may result, but they are not likely to be so sharp as to seriously hamper economic growth.

Short-term interest rates and yields on most kinds of longer-term issues have declined by more than 100 basis points since the first quarter of 1975, and by considerably more relative to the peaks reached in 1974. Three-month Treasury bill rates are now about 4 ⅝-4 ¾ percent, down from nearly 6 percent early in 1975. Yields on recently issued AAA utility bonds are now about 8¼ percent, also sharply below early 1975 levels. Home mortgage rates are an exception to the general trend, having dropped little if at all.

In the first year of economic recovery, nominal GNP increased by about 13 percent, with real output increasing 7.3 percent, and prices rising 5.5 percent. However, during the second year real economic growth slowed to less than 4 percent, while inflation continued at an above 5 percent rate. Nominal GNP increased by only slightly more than 9 percent during this period, a rate of growth that required less financial support than the previous year, and hence produced less pressure on interest rates. Also influencing interest rate behavior recently has been the fact that the Federal Reserve's target ranges for the monetary aggregates have proved to be consistent with a federal funds rate in the 4½ to 4¾ percent range.

The President's economic program is intended—and expected—to accelerate the rate of real economic growth to about 6 percent during the remainder of 1977. With the recent and prospective increases in food prices, the overall price level is not generally expected to increase any less rapidly this year than last. Thus credit requirements will increase. So far during the recovery period, unusually rapid increases in the velocity of money have made relatively modest increases in the money supply consistent with falling interest rates and ample supplies of credit. In the years ahead, however, it is questionable that such a rapid increase in velocity can be sustained. Some rise in interest rates, particularly in short-term markets, is widely expected.

The prospective tax rebate program will cause the money supply to increase strongly for a brief period following the distribution of the rebate checks. A similar situation was encountered when tax rebates were paid in the spring of 1975. The narrowly defined money supply (demand deposits and currency) increased at a 12.6 percent annual rate between April and June 1975, considerably above the guidelines established by the Federal Reserve. At that time there was a sharp runup in short-term rates as the Federal Reserve "leaned" against the rapidly expanding money supply. Subsequently, the money supply settled into a more acceptable rate of growth, but some debate has continued as to whether Federal Reserve action may have partially offset the stimulative effects of the tax rebates.

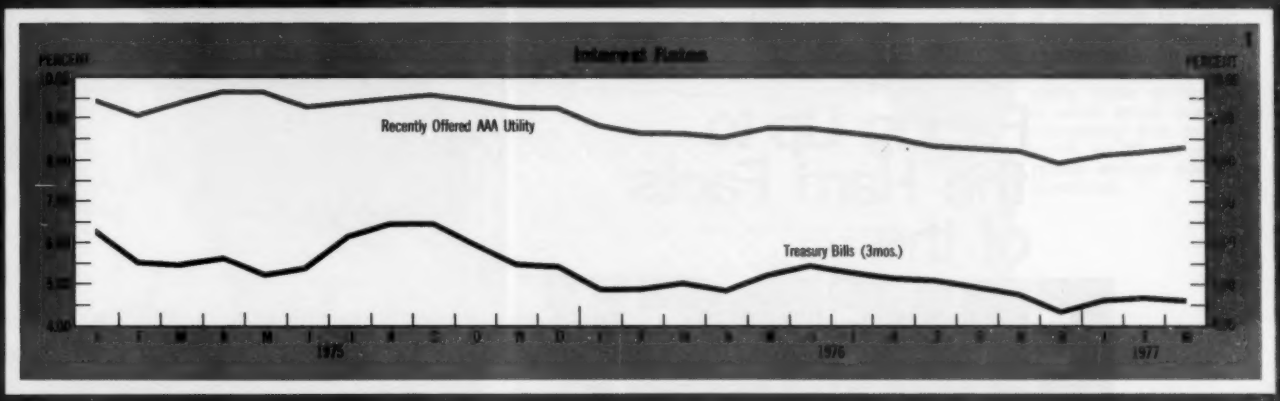
With the benefit of this historical experience, the Federal Reserve this spring expects to be able to make a more accurate assessment of the monetary impact of the tax rebate program, and the Federal Reserve Board has indicated its intent to allow for the temporary effect of the rebate on the money supply.

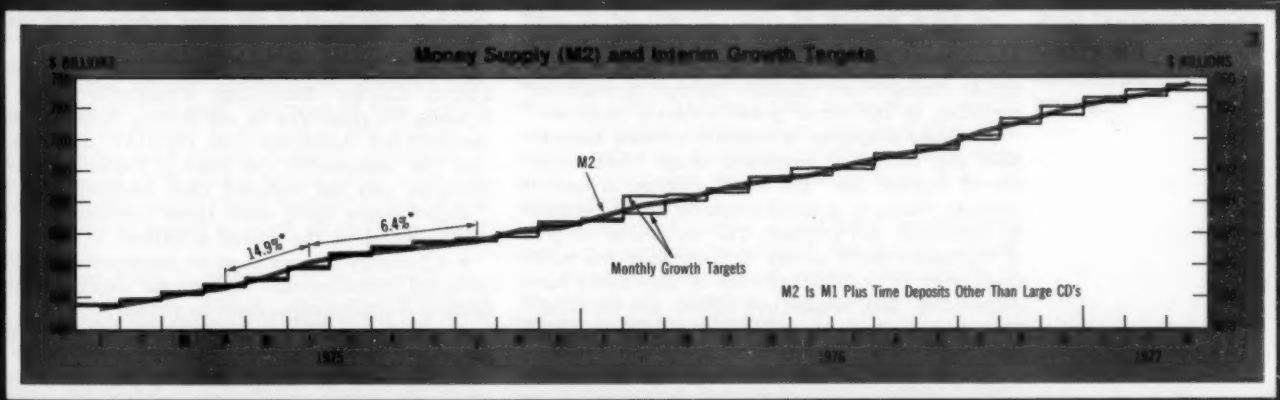
The demand for credit has been strengthening in recent months. The volume of commercial and industrial loans began to rise about mid-1976 and increased significantly in the fourth quarter of last year, boosted by the accumulation of bankers acceptances. Thus far in 1977 commercial and industrial loans have continued to expand, despite the massive liquidations of bankers acceptances.

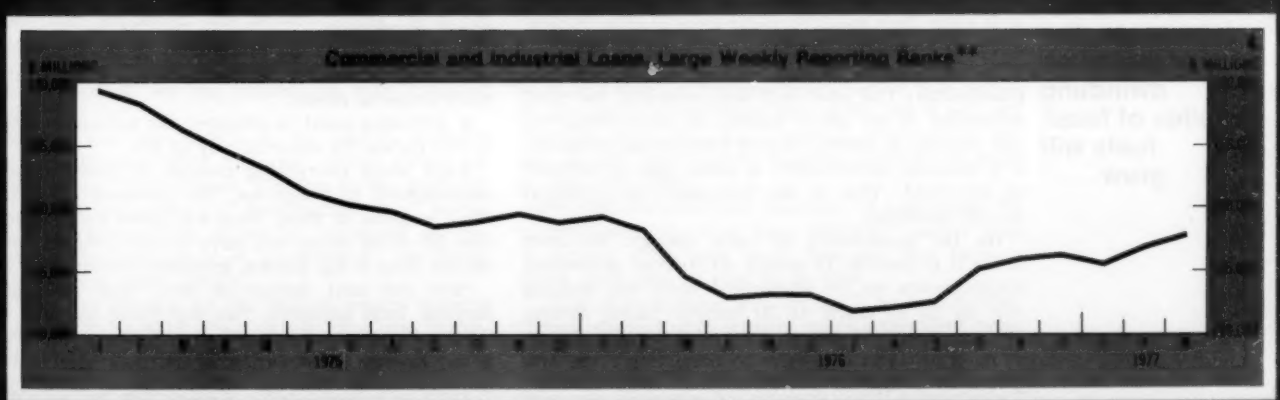
In general, however, the growth of loan demand is not expected to accelerate nor to place serious pressures on credit markets.

The first major test of the strength of bank loans this year came as corporations paid taxes in mid-March. These tax payments were expected to be particularly large, reflecting not only the sharp increase in profits last year, but also payments to reduce the spread between accrued tax liabilities and payments. The increase in bank loans was only about seasonal in nature and clearly indicated that corporations have sufficient liquidity to finance further economic growth. In addition, the volume of commercial paper issued by non-financial corporations, a close substitute to bank loans, has not shown any indication of strength over the past six months. This provides further evidence of ample liquidity.

The increased pressures on credit markets over the next year will be the result of a more rapid rate of economic growth. Interest rates could increase somewhat as a result, but the increase is not expected to be either particularly sharp or severe. Short-term credit demands will rise, but will be moderated by the ample liquidity now within corporations and the increased cash flow associated with a faster rate of economic growth. The experience gained from the tax rebate program in 1975 suggests that temporary aberrations in money supply growth will be accommodated, and interest rate changes, moderated. The interest rate outlook will be dependent on the more fundamental forces of continuing economic growth.





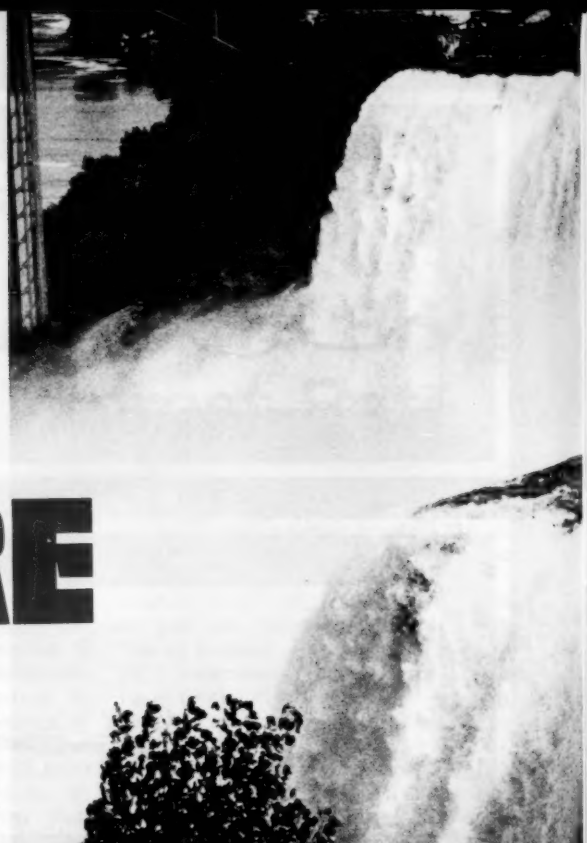


* Annual rate

** Seasonally Adjusted by Federal Reserve Bank of St. Louis

Source: Board of Governors of the Federal Reserve System

Facing Up to the Hard Facts of the ENERGY PICTURE



Officials closest to the nation's energy problem have submitted some face-the-fact judgments that could shape public attitudes in the months ahead.

On cynicism vs. reality: "We have succumbed to easy accusations that energy companies are holding back supply to make a killing when the price goes up." The truth is, according to the head of the Federal Government's energy development program, the energy shortage is completely beyond any artificial fast-buck maneuverings.

On clean burning of coal: "It will be at least another ten years before new technologies for deriving clean fuels from coal will have a measurable impact on electric power production," according to an electric power industry scientist.

On public suspicion of industry-utilities cooperation: Big industrial customers could make better use of energy, but "the main problem is one of attitude. There is general suspicion of cooperation by industries and utilities. The legitimate concern of regulators about energy cost increases has made them wary of possible criticism if they foster such cooperation. But cooperative efforts are essential." This from a large corporation's energy relations chief.

On whether to take the risks of widespread nuclear power developments: "The rest of the world will go nuclear with or without our approval," and it is clear that the U.S. must have nuclear power, asserted a scientist in the power research field.

On progress in making nuclear fusion energy a practicality: The year 1976 was probably the most important in the entire history of fusion research, and success is ahead, despite formidable problems, if a national commitment is made now to proceed in this field. This is the judgment of a federal energy specialist.

On the practicality of solar energy: In some areas it is possible to supply 40 percent of heating requirements on an economical basis but moving this up to as much as 70 percent raises serious cost questions. However, this balance will change as mass production reduces solar heating costs, and prices of competitive conventional fuels rise. So concludes the head of the solar energy trade association.

"... energy consumption will increase, the pressure on dwindling supplies of fossil fuels will grow ..."

These judgments were made during the recent Fourth Energy Technology Conference held in Washington sponsored by the Energy Research and Development Administration (ERDA), the American Gas Association, the Electric Power Research Institute, and the National Coal Association.

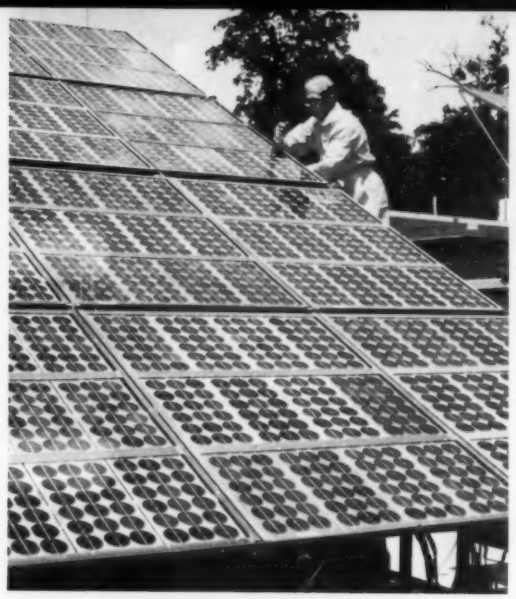
Major points made were those considered to be at the center of the energy situation:

- All energy sources must be developed and technological improvements to increase energy availability and effectiveness must be pushed;
- A major energy conservation program is an imperative;
- Coal must be recognized as a primary energy source;
- Natural gas should be deregulated and nuclear power developed;
- Balance must be established in governmental regulatory measures between energy demand and environmental needs;
- Attitudes must be changed, the nation no longer can pursue its wasteful way of life.

Even when everything possible is done, energy consumption will increase, the pressure on dwindling supplies of fossil fuels will grow and the nation for many years will have to face tougher conditions than it has known, speakers proclaimed.

"For the next decade or two," said Arkansas Senator Dale Bumpers, "we are going to have to conserve energy, work hard on technology and pray a lot. Energy conservation is the only alternative available to us. But for conservation to take hold

"We must be prepared to dig and burn a lot of coal" if the nation elects to turn away from nuclear power, a top government energy official told conferees.



It is possible to supply 40 percent of heating requirements on an economical basis using solar energy in some areas but increasing this to as much as 70 percent raises serious cost questions.

there will have to be a big change in national attitudes. Waste is a hard habit to shake."

Bumpers predicted that coal would once again become the nation's premium fuel by the end of the century.

Representative Mike McCormack of Washington said that if energy consumption continues to grow at the present rate the nation will be using the equivalent of 82 million barrels of oil a day by the end of this century, compared to 35 million barrels at present. Under even the most optimistic forecast, he said, consumption by the end of the century would be the equivalent of 60 million barrels a day.

"Regardless of any conservation program that can be adopted," he said, "we must at least double our energy production by the end of this century."

Commenting that present domestic production is the equivalent of 27 million barrels of oil a day, he said that if this amount were doubled, it would still be necessary to import as much oil as is now being done.

"We must strive to produce energy in every possible way," he said, "and we must go forward as rapidly as our technology will allow."

McCormack said he favored legislation that would aid homeowners in installing solar systems.

"We are rapidly approaching longer and more frequent periods of energy disruption as typified by what has happened this winter," said Governor George Busbee of Georgia. "Unless the scope of the energy problem is better recognized and enormously better handled, we are headed for very troubled times."

Busbee said the answer to the energy problem begins with leadership, the most potent forum for which is the White House. The key to the problem, he said, is leadership and coordination at all levels, pulling together the collective resources of the state, with interaction of government, academia, industry and other groups.

"You can develop all the federal energy policies you want," he said, "but unless they are implemented at the state and local levels, they will not be effective."

Robert W. Fri, Acting Administrator of ERDA, said "we need to confront the harshest reality of all, the failure to solve our energy problems."

He said an energy policy would have to be built "on the twin pillars of certainty and conservation," supported by courage. It will take courage, he said, "to abandon our comfortable ways and ask the real questions."

Emphasizing the need for certainty, he said:

"There is need for enormous capital investment to solve our energy problems. At the same time, in the minds of businessmen there are uncertainties that may nearly stop new investment decisions.

"We must make decisions on these investments very soon. New power generators take close to ten years to build. The lead time to develop a sizable coal gasification industry is at least that long. Coal mines, refineries, pipelines, and the rest may come more quickly, but we nonetheless must start on some of them soon.

"The irony, of course, is that while creating this need for enormous investment, the energy problem has simultaneously created serious uncertainties in the minds of investors, and uncertainty rarely breeds aggressive investing.

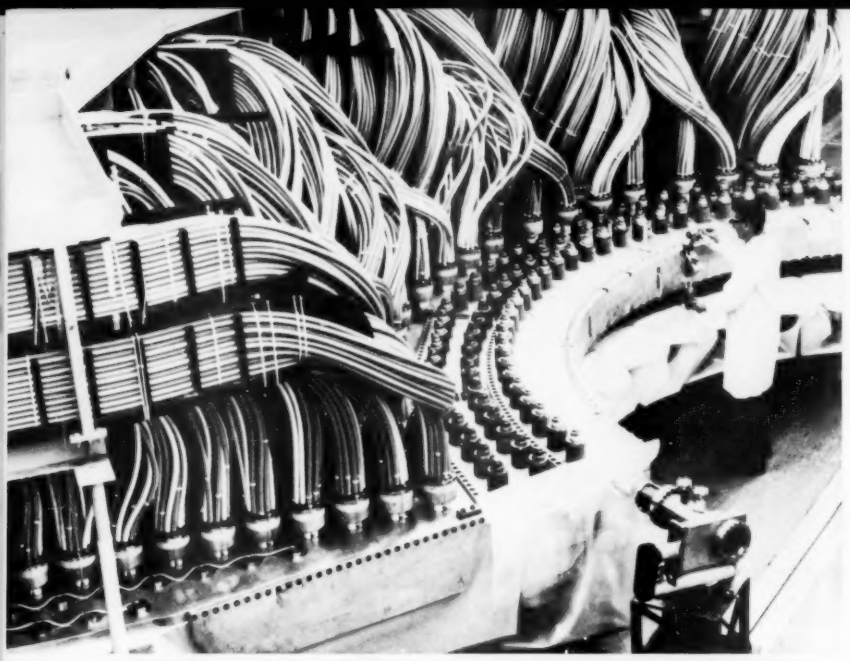
"In my judgment, therefore, it is just this uncertainty that renders the energy problem so intractable. Our greatest investment uncertainties lie precisely in this area—coal, nuclear fuels, and refining capacity.

"It is a tight and vicious circle that arises from the very nature of the energy crisis, a circle that is as persistent as the underlying forces that create it. We must act to break that circle, for it will not dissolve on its own. And we must do so soon if we are to have new energy supplies actually in place by the early 1980s."

Fri said the principal challenge to technology "is to make our industries more efficient," rather than to create substitute fuels, because "we have a fairly good idea of how to do that.

"The opportunities are obvious," he commented, "more efficient auto engines, more convenient mass transit, advanced power cycles for electric generation, ways to use waste heat from power production, new processes for primary metal extractions."

"The reality is that certainty and conservation carry an enormous price."



Despite formidable problems, success is seen ahead for nuclear fusion energy. 1976 was probably the most important in the entire history of fusion research.

Asking why, if policy goals have been clear so long, has the nation failed to realize them, Fri said part of the answer lies "in our unwillingness to ask the real questions.

"For example, we continually ask why the government does not have a comprehensive energy policy, and why we Americans don't conserve. Those are not real questions.

"The reality is that certainty and conservation carry an economic price. For no certainty is more important in attracting private investment than the certainty of price levels, or at least the certainty of how price levels are to be set. And no step is likely to produce conservation more forcefully than the certain knowledge of higher energy prices."

Fri said the nation has debated decontrol and deregulation, and deplored high energy prices, but has not faced the real question, which is the price it is willing to pay.

"We have succumbed to easy accusations," he observed, "that energy companies are holding back supply to make a killing when the price goes up."

Fri said "we should be asking whether government is going to pay the price to accelerate the introduction of new energy supply and conservation technology."

The first question that has to be asked, he insisted, is whether the nation is to have nuclear power. If so, he added, "we must deal with its problems." If not, he said, "we must be prepared to dig and burn a lot of coal."

Fri contended that it is necessary to have nuclear power, and nuclear power of proven capability.

"And that means light water reactors," he said. We also need to ask how much more we want. More specifically, what should be the relation of the light water reactor to the plutonium economy.

"The prospect of worldwide use of plutonium is in my judgment the most formidable issue in nuclear power today . . .

"If there is controversy and uncertainty surrounding the plutonium question, and if we need light water reactor power now, we must ask whether the light water reactor should be burdened with the uncertain future of the plutonium economy."

Commenting that there is no such thing as an average nuclear accident, Fri stressed the need "to reduce the probability of reactor accidents, and to find more ways to contain further the consequences if an accident should occur.

"I think we need to ask ourselves," he said, "if we really know what we are going to do with waste from commercial nuclear reactors . . .

"I think we will be able to say very soon, and with some real conviction, that the technology for disposal of commercial waste is in hand."

Milton Levenson, Director of Nuclear Power of the Electric Power Research Institute, said it is clear that the U.S. will need nuclear power, "but the rest of the world will go nuclear with or without our approval."

Declaring that "our nuclear option is in jeopardy," he said: "We are engaged in a great deal of thrashing around, and are not moving very rapidly toward energy independence."

Edwin E. Kintner, Director of the Division of Magnetic Fusion Energy of ERDA, said the previous year had brought important technical advances in fusion research, perhaps the most important in the history of fusion.

"We have also become more aware," he said, "of stern challenges confronting the program in addition to the scientific and engineering problems we face before fusion can be brought to practical demonstration."

Discussing at length the advantages and problems inherent in fusion, he said:

"The magnetic fusion energy program needs an expression of the nation's commitment and intent. We think the decision should be taken now to proceed aggressively to assess the tokamak and mirror concepts in the early 1980s, operate a power producing device in the late 1980s and build a demonstration reactor before the end of this century."

George R. Hill, Director of Fossil Fuel of the Electric Power Research Institute, said "it will be at least another ten years before new technologies for deriving clean fuels from coal will have a measurable impact on electric power production."

Although technologies are now being developed for conversion of coal to clean liquid and gaseous fuels, Hill said they are not now available and the electric utility industry will have to rely on conventional methods of burning pulverized coal in utility boilers until at least 1985.

He said the utility industry is making a major effort to upgrade conventional coal-burning practices at existing and new power plants "to meet newly imposed environmental, social, and economic constraints placed on the production of electricity."

The industry, Hill said, is working on methods to clean coal before it is burned, both by physical methods to remove mineral matter and by chemically changing it to separate out sulfur and ash. Technology is also being developed, he added, for regenerable flue gas desulfurization, and efforts are under way to control two other power plant emissions, nitric oxide and particulates.

Eric C. Reichl, President of the Conoco Coal Development Co., said gas and oil will have to be the added forms in which coal is sold, and that coal production will have to soar from the present 600 million tons a year to 1,200 million or 1,800 million. This will mean, it was pointed out, a great increase in the number of coal miners.

Reichl asked why the nation didn't go back to producing gas from coal. He recalled that gas was being produced from coal before electricity was produced from coal. The first gas-from-coal company, he said, was started in 1816.

Edward V. Sherry, Director of Energy Relations of Air Products and Chemicals, Inc., Allentown, Pa., said a major opportunity for energy conservation exists in cooperative arrangements between industry and utilities.

"The main problem," he said, "is one of attitude. There is general suspicion of cooperation by industry and utilities. The legitimate concern of regulators about energy cost increases has made them wary of possible criticisms if they foster such cooperation. But cooperative efforts are essential in making maximum use of conservation possibilities."

Sherry pointed out a number of examples of cooperative efforts that could be practiced more widely, and that could be done under existing laws and technology. One would be the simultaneous generation of steam for industry, or district heating, while producing electricity for the public. Others would be the sale of electricity from industrial plants to public utility networks, curtailable electric power service, joint use of natural gas plants by industry, and recovery of refrigeration stored in liquefied natural gas.

L. H. Sutherland, Vice President, Development and Research, Lone Star Gas Company, contended that there are vast quantities of natural gas if the market is willing to pay for it. Pointing out that marketed production of natural gas in the U.S. in 1975 was 20 trillion cubic feet, he cited estimates ranging as high as 2,544 trillion cubic feet in proven world reserves.

The gas industry, he said, is engaging in research and development to make efficient gas appliances in order that gas may continue to be a desirable domestic fuel.

"We're doing that research," he said, "because we know we can provide increasing quantities of gas for many decades if we are willing to pay for it. We must learn how to show our customers how to use it efficiently."

In an extensive discussion of solar energy, a number of speakers made the point that solar energy is available now for hot water in many areas on an economic basis, although the question of its use for heating is mixed, depending on a number of factors, including climate and the prices of conventional fuels.

Sheldon Butt, President, Solar Energy Industries Association, commented that in some areas it might be economical at the present time to use solar energy to provide 40 percent of the heat in a home or building, whereas in some of the sunny cities of the West it might be economical to use it to supply 70 percent of the heat. He pointed out that the higher a person aims in providing solar energy for heating the higher the required investment on a pro rata basis, and consequently the higher the pro rata cost. Thus, to try to move the share of solar heat from 40 to 70 percent in some areas might confront a person with more cost than the higher share of solar would be worth.

It was recognized, however, that the solar picture likely will change because of two factors: the declining cost of solar installations; the rising price of conventional fuels.

Albert Weinstein, Manager, Solar Heating and Cooling, Westinghouse, said solar installations will not reach a large-scale market until companies come up with a standard package that builders across the country can apply. He said Westinghouse has a prototype of a package that will be ready soon.

Most houses, Weinstein commented, are not properly insulated to prepare for a solar installation. It was generally agreed that houses need to have the air holes plugged up, a job which on the average probably would cost $2,500.

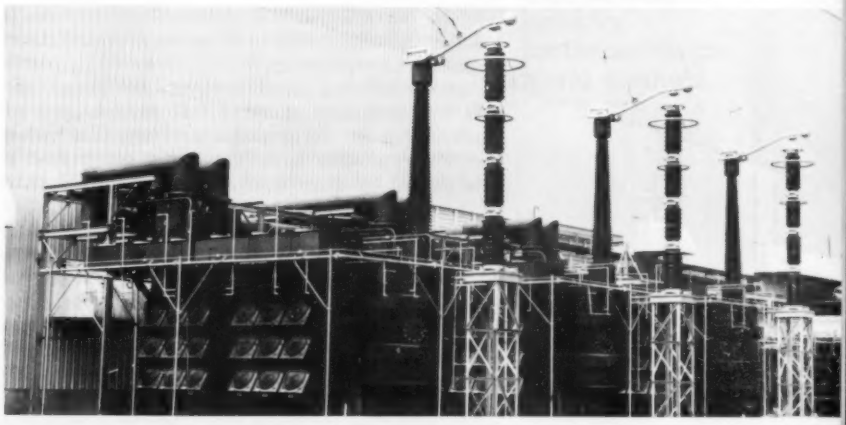
"To try to put a solar system in a very leaky house just doesn't make sense," Weinstein commented.

Arnold D. Cohen, Program Manager, Solar Programs Space Division, General Electric, said General Electric has a contract to develop standardized solar system packages for homes and commercial structures.

The conference closed on a more optimistic note than it began. Llewellyn King, Editor and Publisher, *Energy Daily*, said "there are some good signs and some distressing ones." He observed that some good policies and solid programs were emerging, but added that those familiar with the energy story had a big educational job to do.

Norman J. Ryker, Jr., President, Rocketdyne, Rockwell International, said: "Going to the moon was far simpler than finding a solution to the energy problem."

"The main problem is one of attitude. There is general suspicion of cooperation by industry and utilities."



New power generators take close to ten years to build, said one official. Therefore, it is time to stop the uncertainty in business executives' minds that could stop new investment decisions.

U.S. educational services attracted British interest last year at the London U.S. Trade Center. These visitors check a piece of supporting equipment, a miniature computer of Centurion Industries.

SPOTLIGHT ON U.S. SERVICE INDUSTRIES IN WORLD MARKETS

The long-popular poster image of American foreign trade depicts U.S.-produced goods—machinery, chemicals, wheat, aircraft, computers—moving out to the world in a highly visible procession. In the 1970s such a picture is incomplete. It ignores the significant and growing contributions of U.S. service industries.

Federal officials have recently completed the first comprehensive study of U.S. service industry participation in world markets. They found that one dollar of U.S. sales abroad in every five is now earned by a provider of services rather than by a seller of goods.

Their newly-released pathfinding report is an upshot of the Trade Act of 1974, which for the first time includes "services" within the scope of Presidential negotiating authority. This was a response to requests by representatives of the service industries—carriers, insurers, bankers, equipment leasers, computer programmers—who felt their growing worldwide position had not received adequate public or governmental attention.

A task force chaired by the Department of Commerce and including members from 11 other Federal agencies has prepared the report. Focusing on 18 specific industries, it described the scope of their international activities, identified their world marketing problems, and put forward some recommendations for solving these problems.

The task force concluded that most problems now confronting U.S. service industries abroad are related to investment restrictions rather than to trade barriers. It also noted that five of the industries studied now have problems termed "serious" in nature: insurance, air transport, maritime transport, construction/engineering, and motion pictures. Problems are developing, too, in some of the other industries, it was observed, and preventive action is urged now to head them off.

Expanding service industry activity abroad is seen as a companion to the steady shift of the U.S. domestic economy from farming and mining, to manufacturing, and today to services, which now employ about two of every three U.S. workers. The same trends are observed in other industrial nations, and this activity, it is said, has outrun the attention of the world's economic policy-makers.

On this point the report concluded: "The extent and characteristics of international commerce in services have been virtually unknown to policy-makers, for international trade and investment data have been developed with an almost exclusive focus on goods. Indeed, in spite of the obvious importance of the services sector to both the domestic and international economies, this study represents the first known effort to assemble or estimate data on the overall size and growth of U.S. service industry participation in world markets."

The specific situation of the major U.S. service industries in today's world markets is presented in the following summaries taken from the task force's 450-page report. It is emphasized that these should be assessed as pioneering efforts in an area that has formidable data-gathering and definitional difficulties.

Construction/engineering: The industry sells its services both by direct export from the U.S. and by operating full-service affiliates abroad.

Many host countries impose stringent restrictions on the proportion of foreign-to-domestic goods used on a project. Licensing procedures and import quotas on capital goods are used by host countries to extract concessions from exporting nations, including easier credit terms. Some competitor nations provide their contractor/engineers with financing and tax benefits that put U.S. bidders at a disadvantage. Sometimes host countries demand performance guarantees that are one-sided and rule out impartial international arbitration. The U.S. itself has tightened its income tax provisions on citizens working abroad, a factor affecting engineers and other professionals working on foreign projects. The task force concluded that these obstacles, while not keeping U.S. constructors out of world markets, "hamper the ability of the industry to achieve its full potential."

Insurance: Despite a rising volume of U.S. insurance business abroad, potential sales have been constrained due to foreign government regulations which restrict expansion. Pertinent figures, for 1975: $300 million in life insurance, $2 billion in non-marine general insurance, $1 billion in marine insurance sold abroad by U.S. companies.

Among industry-listed problems are expropriation of capital investments and forced divestment, whereby U.S. companies are forced to sell out to host governments or to government-favored enterprises. Also, American companies find it virtually impossible to underwrite commodity shipments to the USSR and Eastern Europe or sell life insurance there. Many other nations require that all or almost all coverage be underwritten by a government-owned facility or by "nationals." Licensing denials or limitations also hold down U.S. insurance carriers' ability to operate in many nations. Other restrictions cover insurance placement, availability of foreign exchange, discriminatory taxes or capital deposit requirements, and repatriation of earnings. Such problems, "while not precluding the industry from operating in foreign markets, clearly place the industry at a competitive disadvantage and reduce its incentive to expand its services." An interesting side-effect noted in the report is higher insurance rates for consumers, including U.S. firms operating abroad.

Air transport services: The financial position of many U.S. air carriers related to their international operations is precarious. Carriers are seen to be particularly vulnerable to rising fuel costs and have fixed expenses that do not shrink with reduced patronage.

Foreign government subsidization makes them compete against national carriers that operate on a non-economic basis. Foreign currency controls restrict availability of foreign exchange for buying services and interfere with remittance of earnings to the U.S. Discriminatory charges are made for use of foreign airports and airways. Illegal ticket discounting and rebating is practiced. Foreign governments' air carriers have ground handling monopolies. Government procurement practices hinder U.S. sales. This is one service industry however, that has the benefit of continuing Federal Government assistance by way of international negotiation.

Maritime transport services: Of all the U.S. service industries, the maritime industry gets the highest level of public and governmental attention in its international operations. Despite the value of such a useful spotlight on its problems, however, the competitive position of U.S. ships is far from favorable. As the report mentioned, American ships' share of the total value of cargo in and out of U.S. ports had dropped to the low level of 18 percent in 1974.

Major international problems abound: varying types of government participation in the maritime industry in many countries, including construction and interest subsidies, special tax and depreciation regulations, trade-in allowances and preferential treatment for the local shipbuilding industry, political use of merchant marine services and thus operation of the industry on a non-economic basis, and cargo preference schemes limiting all or part of a country's exports or imports to national carriers.

"The U.S. merchant marine," the study noted, "cannot currently compete without substantial subsidies and even with these cost-based subsidies, its competitive position is affected by foreign practices favoring national-flag fleets. It is felt that the discriminatory practices that exist severely impede the ability of U.S. companies to gain fair shares of international markets."

Motion picture distribution: Film rental revenues from abroad are significant to the U.S. industry. Public preference abroad for U.S. films is expected to continue strong. However, free competition with foreign producers is considered virtually nonexistent because of screen and import quotas, the task force learned.

Attempts by foreign governments and trade groups to "limit the importation of films and remittances of earnings, to enforce uneconomic or discriminatory commercial practices, and to drain off earnings through excessive taxation" are widespread. There are screen quotas, which limit screen time for imported films; discriminatory admissions taxes; film rental price controls; remittance restrictions; local film printing decrees; local production subsidies, and national import and distribution monopolies. To hold the existing share of foreign markets may become even more difficult, the industry observed, because new methods are continually being devised to restrict U.S. film imports.

Accounting services: Offices of U.S. accounting firms are located in practically all countries, representing investments of $90 to $100 million and bringing in revenues estimated to exceed $1 billion annually.

Trade issues that affect CPAs ability to service international clients include: foreign government restrictions on the use of an international firm's name, discriminatory visa or citizenship requirements for foreign professionals, and restrictions on remittances of funds from abroad.

Restrictions currently placed on non-national accountants have not prevented the American accounting professionals from adequately serving most U.S. companies abroad, in the opinion of the industry. However, further restrictions may limit the accounting service industry's ability to realize its foreign expansion potential, and growth in the industrial sector could be slowed.

Advertising agencies: U.S. agencies operating in 55 countries accounted for $3.6 billion, or about a third, of total foreign billings of $10.2 billion in 1975. The industry reported some difficulties in importing training materials, problems with cost variations, employment quota requirements, social taxes levied on payrolls, and the inability in some cases to repatriate profits. But it described these as largely irritants which do not materially affect the ability of the industry to operate abroad.

Automotive leasing and rental services: U.S. franchisers in this industry have more than 2,250

This study represents the first known effort to assemble or estimate data on the overall size and growth of U.S. service industry participation in world markets.

SPOTLIGHT:

SERVICE INDUSTRIES

Expanding service industry activity abroad is seen as a companion to the steady shift of the U.S. economy to services, which today employ two of every three workers.

Language labs are among the best-known of all training aids. Here Telex Communications displays its earphones at an exhibition at the Mexico City U.S. Trade Center.

locations abroad, mainly in Canada and Europe, and in 1975 had estimated receipts of $175 million.

Industry representatives mentioned these trade issues: foreign government regulations on the required proportion of ownership by foreign nations, restrictions on repatriation of profits, franchising licensing regulations in countries where technology laws are restrictive, and problems of trademark protection.

Although U.S. franchised automotive rental businesses abroad generally do not receive equal treatment with regard to financing or profits compared with local companies, the successful expansion of such activities over the past decade indicates that there are no insurmountable problems hindering industry activity in most countries.

Banking services: The task force report quotes statistics through 1974 in this field, noting that U.S. banks then had 732 branches in 79 foreign countries and overseas areas of the U.S.

International problem areas included: in most foreign countries branches of U.S. banks have to be capitalized as if they were independent banks; in some countries there are restrictions on the type of deposits U.S. banks are permitted to accept, and U.S. banks are often required to have a board of directors made up exclusively of citizens of the host country.

Discriminatory regulations applying to non-national banking institutions act as irritants rather than impediments to U.S. banking operations abroad. In fact, the problems in international banking appeared to the U.S. industry to be the result of general economic policies that are applied equally to all foreign banking institutions and not unfairly to U.S. banks.

Communications services: Basically this field is a regulated government-operated monopoly in almost all parts of the world. The following international problem areas were industry-identified: government-sponsored and financed consortiums are making competition difficult for U.S. companies and regulations sometimes require a fixed percentage of local company participation. The industry views these circumstances as nuisances rather than major market impediments, and feels that the International Telecommunications Union, which is overseen by the United Nations, is an effective forum for the solution of operational problems.

Computer services: American firms began commercialization of computer services earlier than most foreign competitors and currently are regarded as the worldwide leaders.

Identifying its problem areas in world markets, the industry referred to a growing tendency in many countries to require data files to remain in the country of origin rather than being transmitted across national boundaries to computer banks located within the U.S. It also noted foreign country restrictions on repatriation of U.S. invested capital and profits. In some cases, foreign government controlled transmission facilities (telephone lines) hamper the establishment of computer networks by U.S. firms.

The computer services industry is relatively new and highly technical. Its intangible product is difficult to tax or regulate in international trade. Some foreign governments are concerned about the lack of local alternatives to U.S. computer services, but the relatively low profile of U.S. firms in this field and the necessity for their services has, so far, kept their problems minor. The industry is looking toward assistance from some central government authority to help settle problems which might arise in the longer term.

Educational services: Educational use of programmed learning devices, TV, and audio-visual supplements to textbooks is providing an international market for U.S. firms. Noneducational organizations, including some corporations, are operating technical education programs outside the U.S. Worldwide sales of U.S. private educational expertise and curriculum materials were estimated at about $30 million in 1975. In this field, there has been some pirating by foreign nationals of copyrighted U.S. materials, discrimination by foreign governments against private educational expertise in favor of non-profit institutions, and instances of excessive deposit requirements in connection with educational equipment sales.

Large numbers of foreign students have entered U.S. trade and technical schools. Governments of Middle East nations are now hiring U.S. technical school graduates to teach trades to their citizens or to work in such diverse pursuits as aviation maintenance, commercial diving and diesel mechanics.

Employment services: There are six U.S. executive search firms operating about 70 branches abroad. They earned $50 million in annual fees at the latest (1975) report. Obstacles to the executive search firms are considered minor, and actually are diminishing as this relatively new and uniquely American enterprise becomes better known internationally. A second category was studied in this field: private employment agencies. There is one private U.S. agency operating abroad with seven franchise offices in Brazil. The bar to growth of

Computer operator training is the subject of this discussion in the Advanced Systems, Inc., booth at a 1976 exhibition at the Tokyo U.S. Trade Center.

private employment agencies is the virtual prohibition against their operation in most nations, which prefer to keep such agencies under state control.

Equipment leasing: This activity of U.S. firms started in the late 1960s. An estimated $30 billion worth (at original cost) of U.S. and foreign-made equipment was on lease in Western Europe by 1975. About half of the equipment leased abroad, it is estimated, originates in the U.S. Substantial growth is expected in this field in the years ahead, as U.S. multinationals and foreign firms seek new methods of financing.

According to industry representatives, international leasing of equipment is sometimes restricted by foreign government regulations on percent of local ownership, varying tax laws, local trade customs, and funding problems with subsidiaries and affiliates. In some instances, profits cannot be repatriated, and there are differing policies regarding extension of credit.

It is reported that in some of the less developed countries the leasing concept is new to governments and the tax environment is not clearly defined when an American subsidiary is first established. Later, when the U.S. firm's leasing activities expand, new foreign government regulations on local ownership requirements have sometimes been applied retroactively and U.S. firms have been required to sell a significant portion of their business activities to local citizens.

Franchising services: In 1974, 217 U.S. franchising companies had 9,663 foreign outlets, compared with 156 franchisors with 3,365 foreign outlets in 1971. By the end of 1977 it is expected that about 275 U.S. franchisors will be operating internationally, principally in Canada, Britain and Japan.

Some problem areas facing franchising operations in foreign countries are lack of protection of trademarks, limitations on royalty payments or licensing and trademark contracts, import restrictions on equipment, restrictions on foreign ownership, and some prohibitions or discouragement of tie-in arrangements. However, the rate of expansion in this field offers solid evidence that foreign laws and regulations cannot be considered overly restrictive.

Health services: Expansion abroad of investor-owned hospital corporations which started in the early 1970s continues strong. Proprietary or private sector health care expertise available from the U.S. is considered a unique service product, as evidenced by the growing demand from foreign governments for new hospitals and hospital management contracts providing U.S. health care technology. Statistical data is not currently available on the volume of exported health services. Because of the recognized superiority of many types of sophisticated U.S. medical equipment, however, a significant volume of medical equipment exports accompanies the transfer of hospital management expertise abroad.

Industry sources indicate that there are generally no barriers to hospital contract bids abroad nor to licensing or staffing hospitals abroad with U.S. professionals. Some inhibitions to expansion, not considered major restrictions, are these: increased competition from foreign government-sponsored and financed consortiums, requirements in some countries of 50-plus percent local ownership of a medical facility, restrictions on repatriation of profits, and occasional problems on import of equipment.

Hotel/motel services: A number of the major U.S. lodging chains have international operations and are described as having a $2-3 billion share of the $35 billion worldwide market. But the recent recessionary period has had a strong impact in this field. Spiraling operational, energy and food costs, decreased business travel and overbuilding of properties have hurt profits. Problems in maintaining foreign properties, and increasingly prohibitive construction and financing costs, have caused the industry to shift away from ownership to management contracts.

Deterrents to profitability, as described by the industry, are these: impediments to free travel and spending by foreign nationals because of exchange restrictions and requirements for exit permits or exit bonds; withholding of earnings of U.S. firms by foreign government central banks during currency reserve shortage periods, and difficulties in maintaining quality standards due to restrictions on import of U.S. equipment and parts.

Legal services: Statistics are sketchy, but it is estimated that less than 1 percent of the business of U.S. law firms can be considered as exported. Major centers for U.S. law firms abroad are Brussels, Paris and London, where they service U.S. clients interested in international transactions or advise foreign clients with interests in the U.S. Varying licensing restrictions are considered an inhibiting factor in this field.

Most problems now confronting U.S. service industries abroad are related to investment restrictions rather than to trade barriers.

Copies of this report, "U.S. Service Industries in World Markets," may be purchased from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161. The cost is $11 for paperback, and $3 for microfiche. When ordering, please include the NTIS Accession number, PB-262528/AS.

Energy Digest

ENERGY ATLAS ISSUED . . . The Energetics of the United States of America: An Atlas (BNL 50501/CZ) is a statistical and graphic description of the nation's total flow of energy, from extraction of fuels through end uses, with information provided on individual counties in every state. The 440-page publication, which contains 31 maps and 8 highly detailed tables, illustrates not only how much energy is produced and used in the United States, but also where such production and consumption occurs. Environmental impacts of energy-related activities upon specific geographical areas are emphasized. Available for $4.50 paperback, $3 microfiche, from NTIS, 5285 Port Royal Rd., Springfield, Va. 22161.

FIGURES MAY MISLEAD . . . Henry Linden, president of Chicago's Institute of Gas Technology has a cautionary word for those who believe that there is a huge reservoir of "energy waste" in the United States which can be readily tapped. He points out that much of this belief stems from comparisons of energy consumption ratios of the major industrialized countries in western Europe and Japan with the corresponding U.S. values. Recent analyses indicate that the relatively high U.S. ratios may be due to the methods used for calculating energy statistics and monetary exchange and inflation rates, according to Linden. They could also reflect national economies with different mixes of industrial and agricultural production and services, different climates, varying population densities, and radically different mixes of energy sources.

BRAKES THAT ACCELERATE? . . . The Garret Corp. has received a $198,000 contract from the Energy Research and Development Admin. (ERDA) to develop and test a combination (hybrid) flywheel electric delivery van. This hybrid system would capture the energy ordinarily wasted during braking of the vehicle and store it in a flywheel to help accelerate after the stop. The system is to be designed to double the van's ability to accelerate, and to increase from 300 to 500 the number of starts and stops that can be made before the batteries must be recharged.

THE BIG PICTURE . . . A recently-published book describes the energy shortage as it relates to the other major contemporary crises: environmental degradation, overpopulation, and food shortages. Written by Dr. George L. Tuve, Professor Emeritus at Case Western Reserve University, the 203-page Energy, Environment, Populations and Food: Our Four Interdependent Crises is available for $14.95 from the Wiley Inter-Science Div. of John Wiley & Sons. 605 Third Ave., N.Y. 10016 ($7.95 paperback).

ENERGY USE RESUMES RISE . . . America's declining rate of energy consumption during the first two full years following the 1973 oil embargo has apparently ended, notes a Commerce Clearing House report. Domestic energy demand actually declined by about 2.5 per cent per year during 1974 and 1975—representing the first two-year downturn in overall use since 1945-46. However, U.S. energy demand rose 4.8 per cent during 1976, to a level only 0.7 per cent below the peak year of 1973, according to U.S. Bureau of Mines figures. Even the offsetting effects of a successful industrial energy conservation effort could not make up for the increased fuel needs due to colder-than-normal weather and heightened economic activity during 1976, the report noted.

DIESEL CAR . . . General Motors plans to introduce a diesel engine on two passenger cars and two pickup trucks this fall, at the start of the 1978 model year. The firm will offer diesel engines as options on Oldsmobile 88 and 98 cars and on Chevrolet and GMC pickup trucks. The engines are expected to produce fuel economy that is 25 percent better than that found in a conventional gasoline engine of similar horsepower. However, since the diesel operates at higher temperatures, reducing its oxides of nitrogen emissions to current statutory levels presents a considerable problem. If emissions standards are tightened for 1978. GM expects to have to put the car aside until new technology is developed to control oxides of nitrogen emissions more effectively.

SOLAR ENERGY JOURNAL . . . A monthly abstract journal from ERDA has been made available on a subscription basis. The journal abstracts and indexes reports, journal articles, conference proceedings, patents, theses and monographs on solar energy including photovoltaic, solar thermal and ocean thermal power plants, tidal power and wind energy. Solar Energy Update (NTISUB/C/145/CZ) for 1977 is available from NTIS, 5285 Port Royal Rd., Springfield, Va. 22161 for $27.50 a year, including a cumulative index. Single copies may be purchased for $3.25.

New Maritime Accord Reached By U.S., USSR

AGREEMENT SPELLS OUT TERMS FOR SHIPMENT OF GRAIN, OIL, ORE AND OTHER CARGOES IN 1977

Representatives of the governments of the United States and the Soviet Union have agreed upon terms for the shipment of grain to the USSR and the shipment of other cargoes between the two nations in 1977, according to Secretary of Commerce Juanita M. Kreps.

The accord ends months of negotiations on procedures for continued implementation of the U.S.-USSR Maritime Agreement, first signed in October 1972 and extended for six years on December 29, 1975.

It clears the way for uninterrupted shipments of U.S. grain, other bulk cargoes, and general cargoes in 1977.

A U.S. delegation, headed by Howard F. Casey, Deputy Assistant Secretary of Commerce for Maritime Affairs, and composed of other Maritime Administration and Department of State representatives, met in Moscow with Soviet maritime officials last month.

Restores undercarriage

Their agreement provides for shipment in U.S.-flag vessels of 3,283,000 tons of grain in 1977 at a freight rate of $16.47 per ton. This total includes one-third of the estimated 6.4 million tons of U.S. grain which the USSR plans to purchase this year plus approximately 1,150,000 tons to make up the undercarriage by U.S.-flag vessels which accumulated from 1975 and 1976. For grain cargoes carried by U.S.-flag ships in excess of the 3,283,000 tons, the shipping rate will be $16 per ton.

With respect to the other bulk cargoes, primarily oil and ore, Soviet maritime officials have agreed to offer to U.S.-flag vessels an additional 373,163 tons of oil and 189,622 tons of ore and other bulk commodities from the first bilateral cargoes available in 1977 to compensate for undercarriages accumulated in 1975 and 1976.

These latest Moscow talks resulted from high level diplomatic contacts between the Department of State and the Soviet Embassy in Washington.

The negotiators first reached agreement on a basic issue—namely, the cargo that is subject to cargo-sharing provisions of the U.S.-USSR Martime Agreement. This enabled them to complete the determination of cargo carried under the Agreement for 1975 and 1976, and to formalize all procedures with respect to the carriage of cargoes between the two countries in 1977.

The basic Maritime Agreement established a broad framework and a set of ground rules for U.S.-USSR waterborne trade, providing merchant vessels of the two nations with easier access to their respective major commercial ports and the opportunity to participate equally and substantally in the carriage of all cargoes moving by sea between the two nations.

KEEPS IT FLOWING—*The recent agreement governing terms of shipment between the U.S. and USSR clears the way for uninterrupted flow of grain and other bulk cargoes, as well as general cargoes, for the current year. Above, the first U.S.-flag ship to call at a Soviet port under the Maritime Agreement of 1972 offloads grain.*

Shrimp Plant Gets Loan To Help Ease Unemployment

A $3 million loan from Commerce's Economic Development Administration (EDA) will help a seafood processing firm expand and create some 300 new jobs at Key West, Fla.

The loan will go to Singleton Shrimp, Inc., which will use it for working capital to convert its shrimp packing house into a plant to package and freeze shrimp and other seafood. Company officials anticipate that the expansion will enable the firm to increase its current workforce of 84 by 300. In addition to the new jobs, Singleton officials expect the expansion to create additional jobs in servicing and supplying the area's fishing boats. The freezer operation also is expected to strengthen the market for the region's commercial fishing fleet.

Most of the new workers at the seafood plant are expected to come from the ranks of the unemployed in Key West and Monroe County.

No Nostalgia For The 1930s Felt By Dust Bowl Residents

Residents of the Plains States feared the dust bowl days of the 1930s were here again following a dust storm last month. To watch the development and spread of such storms, meteorologists are being aided by two environmental satellites operated by Commerce's National Oceanic and Atmospheric Administration (NOAA).

The satellites—a geostationary spacecraft positioned 22,200 miles (35,730 kilometers) above Colombia at the equator, and a polar-orbiting spacecraft at an altitude of 935 miles (1505 kilometers) passing over any given spot on the earth twice every 24 hours—showed the movement of the major dust clouds from a storm the week of February 21.

The dust cloud originated in New Mexico and northeastern Colorado, picked up additional dust from West Texas, Kansas, and Oklahoma, and crossed over Mississippi, Alabama, and Georgia out into the Atlantic Ocean. It affected the atmosphere as far east as Bermuda where the normally crystal-clear skies were hazy for several days.

Over the Plains States, blowing dust was observed at altitudes as high as 17,000 feet (5182 meters), and over Alabama and Georgia, as high as 7,000 feet (2134 meters).

The movement of dust storms is particularly significant to aviation interests, soil erosion experts, scientists conducting solar energy research, individuals with certain allergies, and others.

During the 1930s it was not uncommon for dust storms originating in the Plains States to blow across eastern portions of the country, but in recent years the effects of such storms rarely have been experienced east of the Mississippi River.

A combination of strong westerly winds and insufficient precipitation in the west central Plains accounted for the intensity of the late February dust storm.

PARCHED EARTH—*If enough moisture had been present, this New Mexico field would have yielded a good crop of winter wheat. Hydrologists expect the drought outlook to worsen, due largely to the scanty snowpack in the western mountains.*

DESOLATION—*The grasslands of the Plains States, exposed to high winds by plowing and overgrazing, succumbed to dust storms in the 1930s and were left uninhabitable. Today, Commerce scientists are monitoring the movement of dust storms by satellite to provide advanced warnings to farmers and others.*

Drought Outlook Worsens In Western United States

The drought outlook in the western United States—particularly California—continues to worsen, according to hydrologists of Commerce's National Weather Service.

The scanty snowpack now present in the mountains of the West almost assures the lowest water supplies in recorded history this summer for parts of the West Coast, the Great Basin and the Rocky Mountain states.

Summer is normally the dry season in the West, and winter the wet season. Thus, the unprecedented drought which has existed this past winter and for many months previous makes significant relief in coming months extremely unlikely.

Recent measurements of water equivalent in the snowpack, and of water currently in the reservoirs, provide a good guide to what will be available in months ahead for irrigating crops and for other vital purposes.

California is the best example of this pattern. Hydrologists believe California reservoirs and streams, normally replenished by melting snow in spring and summer, will receive only a trickle of the usual amount this year, assuming that precipitation in the next few months is somewhere near normal.

Other Western states have a similar wet-winter, dry-summer variation, although to a lesser degree.

Oil Cast Upon The Waters Returns To Haunt Bathers

Like most other areas of the human experience, you get out of an ocean what you put into it, according to scientists reporting on last June's massive contamination of Long Island ocean beaches.

Citing many probable sources of the materials which littered the area's beaches last June, researchers from Commerce's National Oceanic and Atmospheric Administration conclude that such incidents will continue, given present techniques for handling wastes and their associated "floatables"—the unsinkable, resilient artifacts of modern civilization.

The NOAA scientists also point out that, although affected beaches were closed as a precautionary measure, water tests showed no serious degradation of water quality during the incident. And they find only a slight contribution to the pollution episode by sewage sludge dumping in the ocean south of New York.

Their report, *Long Island Beach Pollution: June 1976,* was prepared by NOAA's Marine Ecosystems Analysis (MESA), the Environmental Protection Agency and the Coast Guard.

A kind of environmental detective story, the NOAA report links seemingly unrelated pollution events across the New York metropolitan area, and unusual atmospheric conditions, with the floatables incident.

Floatables were dispersed over some 7,500 square nautical miles (25,700 square kilometers) of the New York Bight, a 15,000 square mile (39,000 square kilometer) area reaching from an apex off New York City to the edge of the continental shelf.

This seaborne litter was driven ashore by unusually persistent south winds.

Many types of floatable material were found on the beaches, including garbage, trash, charred wood, oil, plastics, rubber, and grease. The last three types of floatable are usually associated with sewage treatment facilities.

A major source of the grease and sewage found in the pollution incident appears to have been chronic release of material into the Bight. The report notes that untreated sewage is routinely discharged from some areas during repair or construction.

Moreover, New York, as most large cities, combines its storm runoff and sewage systems. When the combined flow is too much for a treatment plant, the overflow bypasses the plant and is discharged untreated. It is estimated that rainfall of only four hundredths of an inch or more in the metropolitan area exceeds treatment plant capacity and leads to this bypassing.

The NOAA investigators believe the June pollution incident could also have been influenced by events occurring as early as May 8, when a medium oil spill in upper New York Bay resulted in large quantities of black tar balls washing up on beaches from Jacob Riis Park to Fire Island. Although this pollution was cleaned up by the end of May, residual oil remaining in the water could have contributed to formation of tar and grease balls later on.

On May 26, an oil storage tank ruptured at Jersey City, N.J., spilling three million gallons of number 6 oil, of which about 150,000 gallons reached the Hackensack River, with large quantities remaining in the wetlands of Hackensack Meadows.

On June 2, two sewage sludge storage tanks containing some 2.7 million gallons of "digested" sludge exploded on Pearsalls Hassock, and an estimated one million gallons of sludge flowed into the water. Soon afterward, the Coast Guard observed material floating out to sea through East Rockaway Inlet.

"The fact is that nondegradable plastic floatables are being introduced into the environment much faster than the environment can assimilate them. This isn't just a New York problem. It's a national problem," explains NOAA Commander Lawrence Swanson, who directs the New York Bight Project.

Long Island Beach Pollution: June 1976 is available in limited quantities from the MESA New York Bight Project Office, Old Biology Building, SUNY, Stony Brook, N.Y. 11794.

Taking The Guesswork Out Of Ocean Travel

Commercial shippers and pleasure boat skippers in the Seattle area can go to sea with a little more peace of mind nowadays.

New types of environmental services tailored to the needs of mariners are being developed by Commerce's National Oceanic and Atmospheric Administration (NOAA) meteorologist-oceanographers in Seattle.

The experimental effort by NOAA's National Weather Service combines computer predictions of winds, waves, ocean swell, and weather.

It provides forecasts for tug and barge traffic based in Puget Sound and en route to Alaska, ice advisories for the Bering and Chukchi Seas, and special forecasts for NOAA research vessels and for people caught in weather-connected emergencies at sea.

Thus far, the Ocean Services Unit has been trying to evaluate how well the services fit the needs of particular users, and whether the products should be considered as possible additions to the regular run of Weather Service data.

"There's quite a variety," according to NOAA Lt. Comdr. Kenneth Lilly. "We've been responding to tug and barge companies, giving their dispatchers weather data and general outlooks. This can be valuable to them, in the sense it helps them decide whether to keep to the coastal passages along southeastern Alaska, or to cut across the Gulf, which saves time and money."

Alyeska Pipeline called last spring, Lilly said, wanting a forecast out to six or seven days because they were shipping a critical cargo to Alaska. "We could give them a five-day forecast, and the forecast turned out to be an accurate one."

Other special forecasts have been made for area sailboaters, for NOAA's data-buoy developers, and for the Bicentennial sailing vessel *Explorer* on the Pacific coastal leg of her voyage to New York.

Not all the information issued by the Seattle unit helps mariners avoid bad weather, however. "We had one call from Boeing," Lilly recalled. "They needed high seas to test a hydrofoil. So we found them some."

Wave Data Is Sought For Engineering Projects

A monitoring program to collect wave data at offshore locations for scientific, environmental and engineering projects has been initiated by Commerce's National Oceanic and Atmospheric Administration (NOAA).

The new research program, which involves at-sea wave measurement and statistical analysis of wave data, is handled by NOAA's National Ocean Survey. It will provide wave condition information for offshore structure design, beach erosion prevention, improvement of marine forecasts, ocean construction projects, marine operations planning and coastal zone planning.

Efforts in 1977 will concentrate on an evaluation of wind and wave measurements methods to be calibrated with the wave data, and the establishment of procedures to provide real-time wave data to marine forecasters.

Wave monitoring is planned off the Atlantic Coast beginning in 1978, in the Gulf of Alaska in 1979, and in other coastal regions in the following years.

Testing Laboratories Seek Accreditation Under New Program

The first testing laboratories to be accredited under a new Commerce Department program are those that test thermal insulation. The request for the accreditation was one of two received by Commerce in December, under the new National Voluntary Laboratory Accreditation Program.

The program is a voluntary system for evaluating the technical and professional integrity of both public and private testing laboratories. It provides manufacturers and others who use testing laboratories with assurance that accredited laboratories have the capability of testing products for compliance with domestic standards important to commerce and with regulations and codes promulgated to protect the health, safety and welfare of the public.

The request was from a consortium of three trade associations representing approximately 85 percent of the thermal insulation industry. The consortium requested that thermal insulation laboratories be accredited against standards in five areas: thermal property measurements, dimensions and stability, strength, vapor barrier properties and fire properties. The trade associations which filed the request are the Thermal Insulation Manufacturers Association, the National Mineral Wool Insulation Association and the National Cellulose Insulation Manufacturers Association.

The planned program will provide for accreditation of laboratories that test a wide range of thermal insulation materials of various forms used by industry and the public to insulate buildings, machinery and heat distribution systems. Such testing is required by thermal insulation standards promulgated by private standards bodies and the government.

The other request was from the National Ready Mixed Concrete Association. It asked that laboratories which test ready mixed concrete be accredited against standards promulgated by the American Society for Testing and Materials and the American Concrete Institute.

Several other requests are expected in the near future.

Dr. Howard L. Forman, administrator of the program, predicts that in time the program will prove to be extremely valuable to the nation's commerce by establishing a reliable means for examining on request the professional and technical competence of private and public testing laboratories that serve regulatory and nonregulatory product and certification needs.

It can also provide a mechanism to assure foreign governments that accredited laboratories have the capability of testing U.S. exports for compliance with requirements of those governments.

Project Monitors Effects Of Northwest Oil Spills

The exact effects of any future oil spills in the Puget Sound area will be measurable, as a result of a study being conducted by scientists with Commerce's National Oceanic and Atmospheric Administration (NOAA) in Seattle. They are studying petroleum found in the sediments and mussels in the Strait of Juan de Fuca and northern Puget Sound.

Part of a larger study of all aspects of the environment that might affect, or be affected by, petroleum pollution, the program is funded by the Environmental Protection Agency.

Four times during the coming year a total of more than 200 samples of sediments and mussels will be collected at a score of shoreline sites for analysis. Sediments and mussels were chosen for study because they are good indicators of oil pollution, and are easily collected throughout the Puget Sound region.

During each sampling, the researchers will record the existing tidal stage, wave exposure, weather conditions and temperatures of air, water and sediment. The sampling site will be photographed each time, and the investigators will record a general description of the site. Chemists at NOAA's analytical facility will weigh the samples, record the texture and color of the sediments, and test them for a long list of chemical constituents of oil and for organic carbon.

The waters of this region have remained relatively unpolluted by oil. But tanker traffic in the Sound is expected to increase substantially over the next few years, and the area may become a port for transfer of Alaskan oil from ship to cross-country pipelines. This increased traffic will bring increased risks of spills and small-scale leaks.

1976 Nonfinancial Sector Productivity Up Slightly

Productivity in nonfinancial corporations increased 4 percent in 1976, the largest annual increase since 1964, according to preliminary data from the Bureau of Labor Statistics of the U.S. Department of Labor. The nonfinancial corporate sector includes all corporations doing business in the United States with the exception of banks, stock and commodity brokers, and insurance and credit agencies.

In 1975, productivity increased 2.8 percent. In 1976, the productivity increase resulted from an output increase of 7.3 percent and a rise of 3.2 percent in all-employee hours. The rise in 1975 was the result of a decline in output of 3.1 percent and a drop in hours of 5.8 percent.

Hourly compensation for all employees in the nonfinancial corporate sector increased 7.7 percent in 1976, compared with a 10.4 percent increase in 1975. Hourly compensation includes wage and salaries as well as employer contributions to social security and private benefit plans.

Unit labor cost, which reflects changes in hourly compensation and productivity, increased 3.6 percent in 1976, the smallest annual increase since 1972.

Real hourly compensation—hourly compensation adjusted for changes in the Consumer Price Index—increased 1.8 percent in 1976, compared with a 1.2 percent increase in 1975.

Unit nonlabor cost—which includes capital consumption allowances, net interest and indirect business taxes—increased 3.1 percent in 1976, the smallest increase since 1972. Unit nonlabor payments—unit nonlabor cost plus unit profit—increased 8.1 percent in 1976, compared to 18.6 percent a year earlier.

Profits per unit of output increased 23.3 percent in 1976, compared with a 25.7 percent increase in 1975. The two increases—following two years of declines—resulted in the highest unit profits since 1966.

The increase in total profits—as distinct from unit profits—of 32.3 percent in 1976 was the largest annual increase and brought the series to its highest annual level since 1958, when the series began.

The implicit price deflator rose 5.1 percent in 1976, compared with a 10.9 percent increase in 1975. This measure reflects changes in unit labor costs, unit nonlabor cost and profits.

Hours of all employees increased 3.2 percent in 1976, compared with a 5.8 percent decline in 1975. Employment rose 2.8 percent, and average weekly hours rose 0.4 percent.

Revised figures for the fourth quarter of 1976 for the private business sector, the nonfarm business sector and for manufacturing have just been released. The revised measures generally show smaller productivity gains than the preliminary series, because the increase in output as measured by the revised series is smaller than the increase estimated previously on the basis of preliminary data. In the durable manufacturing sector, productivity decline is smaller in the revisions because the preliminary series showed a larger decline in fourth quarter output than the revised series.

KEEPING IT CLEAR—*Excavating and trenching are two of the riskiest operations in the construction industry, resulting in death for as many as several hundred persons in a single year. Commerce's National Bureau of Standards is helping to develop provisions for adequate shoring and permissible slopes in excavations.*

Safety Standards Improved For Excavation Workers

Eventually, Commerce's National Bureau of Standards gets around to helping practically every industry in the country.

A program to assist the Occupational Safety and Health Administration in improving safety standards for workers in excavation and trenching operations has been started by NBS's Center for Building Technology.

Excavation and trenching are two of the most hazardous operations in the construction industry. In 1973 alone, a total of 226 persons lost their lives when shallow excavations collapsed on them.

The two-year program aims to develop adequate provisions for shoring and permissible slopes in excavations, as well as guidelines for design and analysis of shoring systems. This work will establish the technical basis for recommended revisions to current OSHA regulations, which are based on outdated standards adopted several years ago.

A number of organizations in the building industry concerned with the problems associated with trenching and excavation have volunteered to gather safety information from member companies.

So far the following organizations are working voluntarily to contribute to the NBS study:

- American Road Builders Association;
- Heating and Plumbing Contractors Council; and
- National Utility Contractors Association.

The Building and Construction Trades Department of the AFL-CIO also has agreed to assist the study by organizing a task force of experienced building tradesmen which will contribute their collective knowledge and experience to the project.

The project was initiated in July and is scheduled to be completed next March. Additional information can be obtained from James O. Bryson, Chief, Building Safety Section, National Bureau of Standards, Washington, D.C. 20234.

Satellite Weather Pictures Proving Decisive Factor In Sugar Cane Harvest

Satellite pictures of weather patterns over the Pacific are helping Hawaiian sugar-cane growers decide when to harvest cane. The information could mean millions of dollars to the growers.

George Fraser, Vice President for Production of the Waialua Sugar Co., calls the satellite pictures provided by Commerce's National Oceanic and Atmospheric Administration (NOAA) invaluable.

He sends a courier each day to NOAA's Satellite Field Service Station at the Honolulu International Airport to pick up a picture from the agency's satellite over the eastern Pacific.

This is a geostationary satellite launched for NOAA by the National Aeronautics and Space Administration (NASA) two years ago. It hovers above a given spot on the equator, and its sensors send back visible and infrared images of the cloud cover from the mid-Pacific to the Great Lakes.

"When I look at satellite pictures," says Fraser, "I can really see what weather is coming our way. Both during the growing season, and when we are harvesting, the satellite images give me an advantage that can help make the difference between profit and loss."

Rain is both a friend and foe of sugar-cane growers. Moisture at the right time is essential, at the wrong time disastrous. It is during the harvesting season, however, that adjustment to the realities of weather becomes complex.

Convection and trade wind showers are the main weather hazards during the spring and fall harvesting seasons each year. When a cane field of 50 to 75 acres is ready for harvest, it first must be burned, a process which must abide by federal and state air pollution regulations. The procedures for burning a particular field depend heavily on wind direction and speed.

After burning, the crop remains must be harvested within 24 to 36 hours to avoid spoilage, and at a rate to assure a steady but not excessive flow of cane to the processing mill. Significant rainfall during this period interferes with getting the heavy vehicles into the field, and also hastens deterioration of the burned cane.

Before igniting a field, Fraser must put together a chain of factors, including the anticipated weather for the next two days, the work load at the mill, and the state of ripeness of the crop. He studies the general agricultural, marine, and community forecasts, looks at the maps, and listens to what the weather people are saying on the broadcasts. But the clearest image he receives of what is about to happen is the satellite pictures.

Here's The First Event Of The Quad-Centennial . . . 199 Years Early

Stand by for the Quad-Centennial—the United States is preparing to show off what its industrial futurologists think will be the products of 2176.

Expo '77, an innovative exposition dramatizing the cooperation between U.S. Government and American industry, will be held in Washington, D.C., June 30 through July 10.

Through exhibits, seminars and stage shows, U.S. Government agencies and major U.S. corporations will unveil the products and services of the next two centuries.

Commerce's United States Travel Service (USTS) is promoting attendance from other countries at Expo '77 as part of its mission to increase business travel to the United States from abroad.

Expo '77, with the theme Tomorrowland of Living, will attempt to dramatize the way government and industry are working together to solve this nation's problems in energy, housing, medicine, agriculture, transportation, space communications and leisure.

A broad spectrum of futuristic prototypes and the latest state-of-the-art models will be grouped under eight exhibit categories. Each category will feature the related U.S. Government agency and the private business and industrial firms in each field.

For instance, the transportation displays by the National Aeronautics and Space Administration (NASA) and the Department of Transportation will be grouped with those from Boeing, General Dynamics, Goodyear Tire and Rubber, Ford Motor, Borg-Warner and Rockwell.

The exhibit will feature a closed-circuit live telecast of NASA's space shuttle landing at Edwards Air Force Base in California.

Also on display will be a working model of a solar heating and cooling unit, and possibly a replica of a breeder reactor. Commerce's National Atmospheric and Oceanic Administration will display the latest laserfax weather satellite, which will show live global weather photos relayed from its Suitland satellite receptor.

Scheduled seminars will be conducted by anthropologist Margaret Mead, oceanographer Jacques Cousteau, polio vaccine developer Jonas Salk, an astronaut, and such futurists as Herman Kahn and Buckminster Fuller.

Ideas Sought In Ten Areas Of Solar Energy

The Energy Research and Development Administration (ERDA) is looking to the public for better ideas on the design and use of simple solar units for heating and cooling buildings.

ERDA will spend about $400,000 helping innovative homeowners, builders, and engineers develop designs for passive and hybrid solar systems. In passive systems, heat or cooling is transferred through a building by natural convection, conduction or radiation. A hybrid unit is one that uses a minimum of automatic controls, fans or pumps to improve circulation.

Small businesses with ideas for improving technology in the ten areas of the solar industry listed below can obtain the necessary instructions for submitting a formal proposal that the agency might fund by writing to ERDA Operations, Div. of Procurement, Washington, D.C. 20545, Attn: Document Control Specialist.

ERDA's plan for conducting research and development is contained in a new interim report, the *National Program Plan for Research and Development in Solar Heating and Cooling*, ERDA 76-144, which may be purchased for $2.70 from the Government Printing Office, Washington, D.C. 20402.

The plan sets forth a directed program that emphasizes competitive solicitations rather than unsolicited proposals. It identifies ten specific areas of needed research:

Non-Concentrating Collectors for Solar Heating and Cooling Applications (PRDA EG-77-D-29-0001)

Concentrating and Evacuated Collectors for Solar Heating and Cooling Applications (PRDA EG-77-D-29-0002)

Solar Collector Materials and Fluids for Solar Heating and Cooling Applications (PRDA EG-77-D-29-0003)

Solar Collector Studies for Solar Heating and Cooling Applications (RFP EG-77-R-Q4-0022)

Thermal Energy Storage Subsystems for Solar Heating and Cooling Applications (PRDA EG-77-D-29-0004)

Thermal Storage Studies for Solar Heating and Cooling Applications (RFP EG-77-R-02-0011)

Passive and Hybrid Systems for Solar Heating and Cooling Applications (PRDA EG-77-D-29-0005)

Active and Passive Systems and Controls for Solar Heating and Cooling Applications (RFP EG-77-R-04-0023)

Solar Assisted Heat Pump Projects for Solar Heating and Cooling Applications (RFP EG-77-R-02-0013)

Solar Activated Cooling Projects for Solar Heating and Cooling Applications (RFP EG-77-R-02-0012)

Urban Areas Urged To Use Master Planning In Fire Prevention

Bringing the total community into fire prevention and control planning is seen as a way to reduce fire loss, according to Commerce's National Fire Prevention and Control Administration (NFPCA).

To show urban communities how this can be done, NFPCA has issued a manual, *Urban Guide for Fire Prevention and Control Master Planning*. The guide has been in preparation since 1974.

The guide was originally developed under an NFPCA grant to the Los Angeles and Mountain View, Calif., fire departments. Their draft manual was implemented by 13 communities across the country to field test the process, which the Commerce agency calls a revolutionary approach. Those tests resulted in refining and altering the draft so that it can be flexible enough for use by all U.S. urban communities.

The NFPCA master planning process is based on setting short- and long-term goals and operating a comprehensive system encompassing all public and private sector aspects of fire protection.

The procedures enable the leaders of a community to determine what fire risks are acceptable, identify alternative strategies for achieving an acceptable risk, and select the alternative which provides the most cost benefit to the community.

The 13 communities were selected through strict criteria which included such factors as geographical distribution, population size, type of fire service provided, type of municipal government, and others. All provided their services on a voluntary basis, at no cost to the U.S. government.

'Educational experience'

Patrick Ward, commissioner of public health and safety in Springfield, Ill., one of the thirteen, said of the master planning approach, "We found it an educational experience that has already brought great benefits to the people served by the Springfield Fire Department. Since our involvement, the City of Springfield has had a reduction in fire loss of great magnitude. We feel that the master plan developed through the testing of the *Urban Guide* has had a great impact upon this fire loss reduction."

A rural and small community guide for fire prevention and control master planning is scheduled for release by the NFPCA next fall.

Further information on the availability of the *Urban Guide* and technical assistance on its implementation can be provided by the National Fire Safety and Research Office, NFPCA, U.S. Department of Commerce, Washington, D.C. 20230.

Energy-Saving Inventions Promoted At Trade Show

Information on how to get government support to develop a new energy-related concept or product will be available at the National Bureau of Standards' exhibit at the Electro 77 trade show in New York April 19-21.

The Commerce agency will provide details of its free evaluation service for inventions that will save energy or help increase energy supplies. The service is aimed particularly at inventions by individuals and small businesses. NBS recommends inventions found to be technically and commercially feasible to the Energy Research and Development Administration (ERDA) for development or other support.

Since initiation of the program nearly two years ago, NBS has received invention designs at the rate of 5,000 a year. About two out of every 100 are expected to be referred to ERDA after being fully evaluated. Sixteen recommendations have been forwarded to ERDA so far.

The exhibit will also feature information on other energy-related research programs at NBS, including solar energy and energy conservation in buildings, industry, communities and appliances.

Electro 77, to be held at the New York Coliseum, is sponsored by the Institute of Electrical and Electronics Engineers and the New York and New England chapters of the Electronic Representatives Assn. The NBS exhibit is located in the Special Energy Conservation area on the street level.

Directory Compiles State Franchising Regulations

Six years ago, the California state legislature instituted control over all types of franchising arrangements. Since that pioneering set of regulations, another 17 states have also enacted comprehensive laws to govern the franchising industry, with still other states considering such legislation.

To enable both franchiser and franchisee to cope with this network of state laws, industry research specialists Frost & Sullivan have published a 1,600-page directory that compiles and summarizes all franchise statutes, rules, and regulations in these 18 states and also the proposed legislation in states which have not yet enacted franchising controls.

The *State Franchising Regulations Directory* was prepared by The Research Group Inc., a Charlottesville, Va., legal research service. For further information, contact Customer Service, Frost & Sullivan, 106 Fulton Street, New York, N.Y. 10038, (212-233-1080). Reference Report #X007.

Calendar Of Business Events

Apr. 18-21—Boston—Marketing and Design/Build/Lease in the Construction Industry, conducted by Jack Miller. Contact: Madeleine Graeter, Group Communications, 6101 Southwest Freeway, Suite 401, Houston, Tex. 77057 (713-664-8818).

Apr. 19-21—Milwaukee — Midwest Engineering Conference & Tool & Mfg. Exposition, Convention Ctr. Contact: Society of Mfg. Engineers, 20501 Ford Rd., P.O. Box 930, Dearborn, Mich. 48128 (313-271-1500).

Apr. 19-22—Woburn, Mass. — Microcomputer & Microprocessor Short Course, Ramada Inn. Integrated Computer Systems, Inc., 445 Overland Ave., Culver City, Calif. 90230 (213-559-9265).

Apr. 20-21 — New York — Marketing Chemical Coatings for Profit, N.Y. Hilton. Contact: Georgene Savikas, Nat'l Paint & Coatings Assn., 1500 Rhode Island Ave. NW., Washington, D.C. 20005 (202-462-6272).

Apr. 20-21—Chicago—New Products seminar. Contact: Heidi Kaplan, N.Y. Mgt. Ctr., 360 Lexington Ave., New York 10017 (212-953-7262).

Apr. 20-21—Gaithersburg, Md.—Applications of Space Flight in Materials Science and Technology, National Bureau of Standards. Sponsors: NBS, NASA. Contact: Ronald B. Johnson, Materials Bldg., B-348, NBS, Washington, D.C. 20234 (301-921-2835).

Apr. 20-21—Washington — 6th Annual Combustibility Symposium, Shoreham Americana Hotel. Contact: Society of the Plastics Industry, 355 Lexington Ave., New York 10017 (212-573-9400).

Apr. 20-23—Chicago — Financial Control & Simplified Accounting in the Construction Industry, conducted by Jack Miller. Contact: Group Communications, see address above.

Apr. 22—Altoona, Pa.—Federal Procurement, Penn Alto Hotel. Sponsor: U.S. Rep. Bud Shuster. Contact: Kenneth W. Butler, Office of Rep. Shuster, 1112 Longworth House Office Bldg., Washington, D.C. 20515 (202-225-2431).

Apr. 22-23—Philadelphia—Oil Spills & the Law Course, Hilton Hotel. Contact: Registrar, Committee on Continuing Professional Education, American Law Institute/American Bar Assn., 4025 Chestnut St., Philadelphia, Pa. 19104 (215-387-3000).

Apr. 23—Goleta, Calif.—Women's Opportunity Workshop, Holiday Inn. Sponsor. U.S. Rep. Robert J. Lagomarsino. Contact (805-963-1708).

Apr. 25-26—San Francisco—New Directions in Manufacturing Mgt., Phase II—Implementation, Golden Gateway Holiday Inn. Contact: American Institute of Industrial Engineers, P.O. Box 1710, Long Beach, Calif. 90801 (213-437-7465).

Apr. 25-27—New York—Research & Development Mgt. Seminar, Barbizon Plaza Hotel. Sponsor: N.Y.U. Contact: N.Y. Mgt. Ctr., see address above.

Apr. 25-27—Chicago—Increasing Productivity Seminar, Holiday Inn Mart Plaza. Sponsor: N.Y.U. Contact: N.Y. Mgt. Ctr., see address above.

Apr. 25-29—Tucson—3rd Annual Reliability Testing Institute, U. of Ariz. Contact: Dr. Chas. Hausenbauer, Dir., Special Professional Education, College of Engineering, U. of Ariz., Tucson 85721 (602-884-3054).

Apr. 26—Cleveland—The Role of Coal in the Energy Crisis, Case Western Reserve U. Contact: Prof. Y. Y. Haimes, Systems Engineering Dept., Case Institute of Technology, Case Western Reserve U., Cleveland 44106 (216-368-4076).

Apr. 26-28—Washington—National Business Equipment Show—1977, Sheraton-Park Hotel. Contact: Convention Mgt. Assoc., P.O. Box 32, Carle Place, New York 11514 (516-997-7513).

Apr. 26-29—Chicago—Int'l Electric Vehicle Exposition & Conference, McCormick Place. Sponsor: Electric Vehicle Council. Contact: Len Lirtzman or Sheila Roche (312-222-1060).

Apr. 26-29—New York — Microcomputer & Microprocessor Short Course, Statler Hilton Hotel. Contact: Integrated Computer Systems, Inc., P.O. Box 2368, Culver City, Calif. 90230 (213-559-9265).

April 27—Houston—How to Obtain a Patent meeting, U. of Houston. Sponsors: College of Law, Houston Patent Law & Bar Assns., others. Contact: Commerce Houston District Office.

Apr. 28—Chicago—Quality of Working Life Conference, Continental Plaza Hotel. Contact: National Ctr. for Productivity & Quality of Working Life, 2000 M St. NW., Suite 3002, Washington, D.C. 20036 (202-254-9890).

International Commerce Report

Mission In Turkey, Egypt Finds Telecom Shortage

U.S. SUPPLIER GROUP, AFTER MARKET-TESTING VISIT, REPORTS IMMEDIATE, LONG-TERM SALES PROSPECTS

The need for immediate expansion and improvement in the telecommunications systems of Turkey and Egypt, and the long-range planning under way in both countries, attracted a recent U.S. trade mission to a market-testing visit that uncovered excellent prospects for sales.

Both Turkey and Egypt have, for example, six-figure waiting lists of those seeking telephones. The mission held a number of meetings with Turkish and Egyptian officials involved with meeting such demands on their government-controlled telecommunications systems.

"The trade mission was the perfect entree to these countries; it provided a successful approach and a good market test where previous individual efforts had been unsuccessful," said Don W. Smith, Mideast international operations manager, Western Electric Corp., Winston-Salem, N.C.

Telecommunications products represented by the mission included voice frequency transmission and signaling equipment, private automatic branch exchanges, broadband transmission equipment, communications towers, hand tools and personal safety equipment, electronic communications security devices, wire-wrapping equipment, telephone cables, cable fault locators, telephone central office equipment and total telecommunications systems.

Television was introduced into Turkey in 1972, and a second network is to be added by the end of this year. Meeting with the Turkish Radio and Television Corporation (TRT), the mission was advised that TRT will be calling for bids in 1978 on 12 radio stations and 38 high-powered UHF TV stations. In addition, 1978-82 plans call for two more FM channels and establishment of TV and radio production centers. Interest was expressed in more U.S. bidding on future TRT projects.

A joint meeting in Ankara with officials of the State Planning Organization (SPO) and the Post, Telegraph and Telephone Administration (PTT) examined plans for expansion of the country's telephone facilities, which will go from 960,000 lines at the end of the 1972-77 development plan to 2,160,000 lines by the end of the next plan in 1982.

One mission member, Mrs. Kay Epstein, President of EXTELCOM International Inc. of New York City, returned to Turkey with an associate immediately following the mission's conclusion to conduct a telecommunications technical seminar for PTT engineers.

In Egypt, the long-range market for U.S. telecommunications equipment, especially in the telephone field, was found to be even more promising, according to Mission Director James R. MacLean of the Commerce Department, as the country increases its present 350,000 lines by at least one million more within the next ten years.

Tenders for main projects valued at $140 million are expected to be called for during 1977-78, with project completions scheduled by 1980. Included will be $45 million for local automatic exchange equipment; $10 million for telephone cables, $7 million for PABXs, manual boards for exchanges and networks; $2.3 million for 1,500 teleprinters; $29.7 million to be covered by six tenders for coaxial cable systems; $10 million for a Cairo/Aswan microwave system; $15 million for earth stations for the Arab satellite system; and $10 million for computer controlled message retransmission telegraph centers.

Ministry of Communications officials noted Egypt's intention to change from electro-mechanical to electronic switching, to have a complete upgrading of the telephone network and to employ underground cable on all future requirements. The chairman of Egypt's Telecommunications Research Center indicated to the mission that the Center is interested in a working arrangement with a U.S. telecommunications research center and has proposed replacement of the entire Cairo area telephone system because the present system has grown without direction or an overall plan. Other Egyptian Government officials indicated that a telecommunications master plan through the year 2000 is in preparation and that there is a decided Egyptian interest in American equipment and systems.

As a result of the mission, five of the seven firms represented expect to conclude arrangements with sales representatives, one member plans to establish a liaison office in Cairo, and at least two members plan early returns to Egypt for follow-up.

Both Turkey and Egypt of necessity require outside funding for their many telecommunications projects and funding sources sometimes dictate the countries of origin for the equipment covered.

Bert Reeh, manager of international sales for WESCOM, Inc., Downers Grove, Ill., feels that Egypt is at the crossroads in its telecommunications development, that it has a real desire for American equipment and systems, and that this is a fortuitous time for U.S. funding of

COMMUNICATING IN ANKARA—*Members of U.S. mission discuss market needs with technical director and engineers of Turkish Electronic Industry & Trade Co.*

Egyptian telephone projects to insure the introduction of American equipment which will set the standards for future procurements because of their high degree of need for standardization.

Members of the mission, in addition to those already mentioned, were: Michael S. Klein, Klein Tools, Inc., Chicago; Arnold M. McCalmont, Technical Communications Corp., Concord, Mass.; J. M. Fleissner and George A. Jackson, Unarco-Rohn, Peoria, Ill.; and Igor Fisnar, O.K. Machine & Tool Corp., New York City.

PORT EXPANSION IN QATAR, TUNISIA, ALGERIA POINTS TO EQUIPMENT MARKET

Port development, expansion and modernization were the focal points of a recent Commerce-sponsored technical sales seminar team that visited Qatar, Tunisia, and Algeria. Port requirements have been given top priority by the governments of all three countries and the need for a variety of equipment is evident, according to reports by representatives of the five U.S. companies that participated in the meetings.

The seminar was presented under the chairmanship of Thomas T. Soules, Director of the Port of San Francisco and President of the American Association of Port Authorities, an advocate of containerization and all of the modern, capital intensive, high productivity technology that that system incorporates. Seminar participants delivered papers dealing with the state of the art in port design, containerization, mobile cranes, communications/control and port traffic monitoring systems and dredging.

Despite some differences of opinion with their hosts concerning approaches to be taken toward resolving port problems in the Middle East, the U.S. executives' presentations drew record audiences, reported Commerce's seminar coordinator Andras F. Behr. Furthermore, participants forecast $27 million in sales for their companies during the coming year, as a result of the seminar.

New design needed in Qatar

Fueled by substantial oil revenues, Qatar's economy is developing at a startling pace. Qatar's oil income was about $2 billion in 1976 and a major portion is being spent on industrial and infrastructure development to diversify the economy. According to Chairman Soules, the Doha port's problems stem from the "conservative, conventional design of the pre-container revolution era of the 1950s" that have been incorporated into the port, and are perpetuated in its current expansion. Three deep water berths are being added to the existing four, but these additions will relieve congestion only temporarily in a port which presently averages 100-120 days' delay.

A new port with no less than 10 berths, being constructed in Umm Said about 25 miles south of Doha, is expected to be completed in late 1977 or early 1978. Umm Said will be the site of Qatar's new heavy industrial complex, including fertilizer plant, LNG plants, petrochemical complex, refinery and a steel mill. When completed, at a cost of about $200 million, the new port will handle both general and specialized cargo. As with the port of Doha, tugs, barges, cargo handling equipment, electronics and related equipment are likely to be required.

Trend toward change in Tunisia

In Tunisia, extensive discussions between Chairman Soules and the Minister of Transport and Communications and the Director General of the National Office of Ports appear to have caused the Tunisian officials to reconsider their opposition to containerization and to look beyond competing Mediterranean ports for advice and technical assistance. The seminar team felt that the balance of power within the National Office of Ports may have shifted to favor containers as a direct result of their presentations.

Major port investments were undertaken in the early 1960s at Port La Goulette and Port Tunis, as well as at Bizerte and Sfax. The new industrial port at Gabes now nearing completion will serve various industries in the area. The new port will also be used to export phosphates to relieve Sfax, which is approaching capacity, but even so, it appears to be oversized for the immediate needs of the area. During their tour of Port La Goulette, mission members noted a number of areas in need of modernization—indicating opportunities for U.S. suppliers of port related products.

Tunisia's port capacity should be adequate for the immediate future but further expansion is likely to be needed in the late 1970s.

Algeria: keen interest in containers

In Algiers, the U.S. company representatives were taken on a tour of the port by motorlaunch. Following the seminar presentations, members discussed with officials of the National Office of Ports what approaches to Algeria's port problems would best serve the country's long term interests.

Supported by substantial petroleum exports, exploitation of enormous fields of natural gas, and a well planned, intensive drive toward industrialization, the Algerian market for port development equipment and contracts offers considerable promise. The Government, which has complete control over all major sectors of the economy, is giving high priority to continued port expansion and updating of cargo handling equipment. Officials of the Ministry of Transport have indicated strong interest in containerization and a decision was recently made to accelerate the pace of port storage area expansion and purchase of new equipment.

The current Four Year Development Plan includes construction of a new hydrocarbons and merchandise port across the bay from Algiers to the East, modernization and extension of the port of Mostaganem in connection with a new iron smelting complex in the West, modernization and expansion of the ports of Annaba, Jijel, and Bejaia and construction of a brand new, specialized port for LNG exports near Arzew in the West.

U.S. firms are in a good position to

U.S. GROUP IN TUNISIA—*U.S. company representatives interspersed their technical sales seminar presentations in three countries with several port visits. Above, group examines new tugboat at Port La Goulette, Tunis.*

take advantage of opportunities generated by Algerian development plans. American skill and technical expertise continue to place U.S. firms in a good competitive position, especially in view of Algeria's intensive efforts to diversify its import suppliers. Prospects are particularly good for suppliers of cranes, barges, motorized equipment of all kinds, fork lifts and other cargo handling items.

Companies participating in the seminar were Ellicott Machine Corp., Baltimore, Md.; Harnischfeger P&H, Milwaukee, Wis.; Frederick R. Harris, Inc., New York; PACECO, Alameda, Calif., and Sperry Marine Systems, Great Neck, N.Y.

Bulgarian-U.S. Economic Unit Has Second Session In U.S.

The Bulgarian-U.S. Economic Council, formed in December 1974, held its second plenary meeting last month, discussing current and future commercial relations between the two countries. Deputy Minister of Foreign Trade Peter Bashikarov headed the Bulgarian delegation at the Washington sessions, and William F. May of American Can Co. led the U.S. participants.

Under Secretary of Commerce Sidney Harman met the Bulgarian delegation, as did senior officials from the State, Treasury and Agriculture departments.

Multilateral Trade Negotiations

This article is another in a series of progress reports on the multilateral trade negotiations, prepared by the Commerce Department Office of Int'l Trade Policy.

GENEVA

Highlights of the March 7-10 meeting of the **NTM Subgroup on Quantitative Restrictions** (QRs) and **Import Licensing Procedures** included discussions of the U.S. suggestions for QR negotiating procedures and a U.S. proposal regarding the simplification of licensing procedures used to administer import restrictions.

The U.S. suggestions were supported by a number of developed countries. However, certain delegations maintained that the bilateral QR consultations already undertaken must be completed before they could accept another set of negotiating procedures. The developing countries generally supported the U.S. suggestions, but stressed the need to complement them with LDC proposals calling for special and differential treatment.

The bilateral consultation process has continued to move slowly, it was reported, because of disagreements between countries over procedures to deal with QRs on agricultural products. Consequently, the U.S. urged other delegations to complete outstanding QR consultations in the near future by utilizing the Agriculture Group agreement reporting procedures for consultations concerning agricultural products. The U.S. noted that it would soon be submitting refined notifications for QR consulations which would incorporate the advice submitted by the U.S. private sector advisory groups.

In a discussion of the draft code of conduct on "Automatic Import Licensing," the U.S. reiterated that such systems used for statistical and surveillance purposes should be eliminated because their objectives can be accomplished through other less trade restrictive means. Nevertheless, the U.S. indicated its willingness to discuss the use of such systems for safeguard related purposes in the Safegards Group. Other delegations stressed the need for automatic licensing ssytems, and urged instead that a code of conduct covering such systems be negotiated within the QR Subgroup.

The **NTM Subgroup on Government Procurement,** at its first substantive meeting March 3-4, devoted most discussion to a GATT Secretariat document outlining major concepts and issues in the government purchasing area. Some MTN members, having participated in the OECD effort to develop a comprehensive, binding international code on government procurement, noted the usefulness of this experience. Developing country members of the subgroup, emphasizing their need to catch up to the education and experience level of OECD members, commented extensively on the "appropriateness and feasibility" of special and differential treatment for developing countries in the government procurement area.

The **NTM Subgroup on Subsidies and Countervailing Duties** met Feb. 28 for a brief multilateral discussion of a Canadian-drafted code on subsidies and countervailing measures, an effort to align views already expressed by various subgroup participants and to serve as the subgroup's "negotiating agenda."

U.S.-Canadian Talks

Secretary of Commerce Juanita M. Kreps and her Canadian counterpart, Ministry of Industry, Trade and Commerce Jean Chretien, met in Washington March 29 for exploration of bilateral trade issues and discussion of some multilateral commercial problems affecting both countries.

PRESIDENT ACTS ON SHOE IMPORTS

President Carter, in his decision on the import injury case involving the U.S. shoe industry, is relying for relief on expanded governmental assistance to the domestic industry and agreements with major exporting nations that would reduce their shipments to the U.S.

The White House and the Office of the Special Trade Representative announced April 1 the President's choice of actions. Domestically, President Carter has ordered a full review of the existing federal trade adjustment assistance programs, to develop recommendations to Congress for any new legislation needed to strengthen the programs. Abroad, he will seek "orderly marketing" agreements, initially with appropriate import suppliers.

The President's decision not to accept the tariff-rate quotas recommended by the U.S. International Trade Commission (ITC) reflected his stated reluctance to restrict international trade "in any way." However, his decision also acknowledges that "only problems as extensive as those faced by the American shoe industry could force me to seek even modest mandatory limits on imports."

On Jan. 9, for the second time within a year, the ITC found import-related injury to the domestic nonrubber footwear industry. Last April, in the first instance, President Ford limited relief to expedited adjustment assistance for workers, firms and communities. This year the ITC recommended that the President impose higher duties on imports in excess of 266 million pairs, equivalent to 1974 actual imports. In 1976 this total reached 370 million pairs, or 48 percent of the U.S. market. Principal import suppliers are the Republics of China and Korea, Brazil, Spain and Italy. The Republics of China and Korea have recorded the largest gains since 1974, equivalent to the overall increase.

It is hoped that, by holding down imports from Taiwan and Korea under agreements that would last no more than five years, the domestic industry would be enabled to adjust to import competition, and, meanwhile, serious inflationary effects on consumers would be averted.

One orderly marketing agreement has been negotiated under the Trade Act of 1974, involving specialty steel imports from Japan. It has been in effect since June 14, 1976.

BRITISH FIRMS' DRIVE TOWARD EFFICIENCY PRODS EDP EQUIPMENT BUYING

British demand for U.S. computer technology is undiminished by the country's current economic difficulties, U.S. exhibitors at a recent London U.S. Trade Center show found.

The data communications field in the United Kingdom is expanding and developing rapidly—largely because economic pressures have brought about the realization that only by increased efficiency can U.K. industry and commerce survive. In almost all U.K. concerns—industrial or commercial, large or small—there is said to be a desire to find out "how to improve" the situation.

With the fluctuating pound sterling, and import tariffs, U.S.-manufactured commodities tend to be slightly high in price in Britain. The technology displayed at DATACOMM '77, however, outweighed most price considerations and as the end-of-show report indicated, slightly higher prices are no bar to sales. Registered trade visitors concluded deals worth $1.5 million, and the 54 participating U.S. exporters estimate that, within the next 12 months, sales as a result of the exhibition will exceed $33 million. Products that appeared to have the best potential at DATACOMM '77 were micro-computers, mini-computers, high-speed modems, visual display units, disk drives, test equipment, network switching management systems, printers, memory boards, and parallel interface extenders.

Among the many successful participants was Ball Computer Products, Inc., of Sunnyvale, Calif. U.K. sales manager Alan Clemetsen was "overwhelmed" by the response to ICL (the world's largest non-American computer manufacturer) and electronics giant EMI, and estimated $5 million in sales to result from the exhibition. R. D. Gemberling, national sales manager of Digi-Log Systems Inc., commented: "Attendees were knowledgeable, highly qualified and definitely interested in buying. There were no tire-kickers." Digi-Log signed four sales representatives, sold $169,000 during the event, and projected $2 million in sales within the year.

One of the factors contributing to the success of the exhibition was the co-operation of the U.K. Post Office. As is the case throughout Western Europe, the British Post Office is the United Kingdom's sole supplier of data transmission services and must approve all equipment attached to public or leased lines. As such, it would exert considerable influence upon the data communications market. Sir William Ryland, chairman of the Post Office Corporation, attended, as guest of honor, the U.S. Ambassador's opening-day reception. In addition, as part of the Trade Center event, the Post Office agreed to participate in a debate on the American versus the European approach to data communications. A well-known BBC TV personality served as moderator. A British computer industry executive and a representative of the British trade press "attacked" the PTT (Post, Telephone & Telegraph administrations) position, which was defended by two top-level executives from the Post Office. Before a packed house of largely "hostile" delegates (including heavy press attendance), the Post Office representatives defended their case skillfully and carried the vote by a narrow margin.

Exhibitors Invited For Fall Oil Industry Event In Jakarta

U.S. firms are invited to participate in the exhibition portion of a petroleum industry conference in Jakarta next October. The event, being organized by the ASCOPE Indonesian National Committee, will focus on developments in technology relevant to the petroleum industry in the region. ASCOPE is the Council on Petroleum of the Association of Southeast Asian Nations. For additional information, write: ASCOPE Conference & Exhibition, PERTAMINA ASCOPE Secretariat, P.O. Box 12/Jkt, Jakarta, Indonesia.

Industrial Development In Singapore Bodes Well For Process Controls

Singapore's need for more technologically sophisticated equipment is expected to grow, as development proceeds in several industries, thus strengthening demand for process control instrumentation. This is the market picture observed by U.S. exhibitors of such products late last year at the U.S. Trade Center in Singapore.

Despite a rather substantial economic downturn over the past two years in the petroleum industry, one of the country's primary end-users of many of the instruments on display, the managing director of one of the leading oil companies foresees a 5 to 7 percent growth in that industry over the next few years, and such growth should bode well for imports of process control instruments. Accounting for roughly 50 percent of imports of such instruments, the petroleum industry will continue to be the most important end user of these products, according to the U.S. Embassy. This industry is the largest in Singapore's manufacturing sector, and its refining capacity ranks behind only that of Houston and Rotterdam in the world. Further development of the food-processing and chemical industries also will help boost sales of this equipment.

In the public sector, the Singapore Government plans to upgrade its utilities and water treatment facilities. For example, the Ministry of the Environment is expected to issue a tender valued at about $20 million in the third quarter of this year for a sewage treatment plant. Again, this should generate demand for process control equipment.

The exhibition's 28 participants estimate that almost $5.3 million worth of orders will develop during the next 12 months as a result of the event. Two representation agreements were signed during the show.

Competition for U.S. manufacturers comes primarily from Japan, West Germany, and the United Kingdom. In general, companies from these countries can "meet or beat" the prices of U.S. firms; thus, it is the quality of the product rather than the price that leads end-users to purchase U.S. goods. Control valves, transmitters, and converters are product areas in which the United States appears to enjoy a particularly favorable market position. Energy-conserving products such as the oxygen analyzer and electronic devices with faster reaction times and greater ease of repair have excellent prospects in the Singapore market.

PROCESS CONTROLS, SINGAPORE—*David Hughes (center), agent for Fisher Controls, shows a Fisher valve to an interested customer at the U.S. Trade Center show. On Hughes' left, John Bilton of the Iowa firm is in deep discussion with a potential customer.*

TENTH USSR PLAN FOCUSES ON QUALITY, EFFICIENCY, SETS MORE MODEST GOALS

The USSR continues to recover from two very poor harvests during the Ninth Five-Year Plan (1971-75). Furthermore, Soviet planners have now targeted higher product quality and production efficiency as primary goals, rather than simply quantitative output. As a result, the principal objectives for the Tenth Five-Year Plan (1976-80), formally ratified last October, are among the lowest in the postwar era. GNP is targeted to increase by an annual average of 5 percent (compared with 5.8 percent planned and 3.8 percent achieved during 1971-75); overall industrial output is to increase by 36 percent, heavy industry by 38 percent and light industry by 32 percent, but capital investment by only 14.6 percent. Despite considerable verbal emphasis on consumer needs, the traditional priority of heavy industry in growth targets has been reconfirmed, adds the U.S. Embassy in Moscow in its annual report to the Department of Commerce on economic trends in the USSR.

Key growth areas

The fast-growing chemicals sector has a planned average annual growth of 10.2 percent in 1976-80 with major attention continuing on fertilizers and synthetic materials. Reflecting the emphasis on new technology and on raising the share of investment going into equipment instead of construction, machinery output is planned to increase 9 percent annually. Within the category, rapidly growing product groups include computer hardware, instruments and automotive equipment, numerically-controlled machine tools, metalforming machine tools, and chemical and petroleum machinery.

Other key growth areas include fuels and energy, electronics and metallurgy. On the other hand, some of the 1971-75 growth leaders will grow at notably slower rates, including motor vehicles, tractors and agricultural machinery.

Investment will be concentrated in heavy industry, transport, and development of fuels, minerals and manufacturing in Siberia and the Far East. Most new fuel and mineral development is expected to be in these non-European regions of the USSR, where the difficult climate and transport problems will make development very expensive.

The agriculture sector also retains its prominence. It is to receive approximately 27 percent of total new investment resources (621 billion rubles) in 1976-80. The average grain yield is targeted to reach 210 million tons in this plan period compared with some 180 million tons during the Ninth Plan.

The leadership has also given considerable emphasis to increased consumer goods output and has described the established targets as "minimal." In fact, in January some of the sub-goals for consumer durables were raised. Nonetheless, what the Soviet consumer can reasonably expect is "more of the same"—moderate but uneven growth in his standard of living with per capita consumption growing at about the rate achieved in 1971-75, i.e., about 3.2 percent.

Underlying the Tenth Plan targets is a reliance on increased factor productivity and industrial efficiency to offset the effects of a slower growth in capital investment. Labor productivity in industry is to increase by approximately 31 percent and is supposed to provide 85-90 percent of the total projected growth in national income by 1980. Steps are to be taken to further economize on use of fuels, specialty steel and rolled metals, areas where Soviet leaders have said that requirements are growing faster than inputs.

Simultaneously, Soviet planners are looking to increased utilization of automated systems and the latest equipment and techniques not only to raise production efficiency but to reduce labor inputs. Although no acute shortage of manpower is indicated until the 1980's, the present slower growth of the Soviet labor force evokes concern among Soviet decision-makers because in the past additions to labor and capital were the principal sources of growth.

The current Five-Year Plan differs greatly from its predecessors in its low rate of growth for capital investment. The projected average annual rate of 3.5 percent is only about that claimed for the previous three plans, but the goal is to obtain an average 5.5 percent annual increment in gross additions of new fixed capital. The hope is to force a better use of investment funds by concentrating on the completion of unfinished projects and improvement and expansion of existing ones as well as on the raising of capital productivity by using newer technology and better management techniques.

Past efforts to reduce the chronic problem of a backlog of unfinished construction were not successful and in 1971-75 the backlog increased relatively more than investment did. Last year was a rather poor start as investment rose 4 percent but fixed assets introduced went up by only 2 percent. The inability to hold down new starts and complete old projects continues and appears linked to the system of planning and management whose success indicators, among other things, place high value on basic construction but not on finishing work.

A confluence of factors will be putting increased importance on management both at the national and plant levels. Among the important ones are the squeeze on new investment (and concomitant emphasis on project completions), the slowing of growth of the labor force, and declining rates of growth in energy and raw materials output. Some tinkering will continue, but no major reform of the Soviet economic system appears to be on the horizon.

The Plan calls for further implementation of administrative reforms aimed at promoting efficiency. In industry this involves mainly completing the formation of production associations—groups of enterprises that use a similar production technology or manufacture similar products. In agriculture the emphasis is on concentration and specialization, accelerating the creation of interfarm associations and agro-industrial complexes.

The 25th Party Congress in March 1976 underlined the need for new initiatives in the management and planning of "intersectoral" and "territorial" areas—i.e., where economic activity crosses either industrial branch or republic lines. General Secretary Brezhnev cited three such areas—fuels and power, transportation, and the production and processing of agricultural products.

Mixed results in 1976

Measured against the objectives set for the Tenth Plan, the overall 1976 economic results can hardly be encouraging to the Soviet leaders. National income and labor productivity fell somewhat short of target, and industrial growth (4.8 percent), though exceeding the plan target, was apparently the lowest rate since World War II. GNP may have grown by an estimated 4 percent (compared with the planned 5 percent annual average growth in 1976-80), but that was a marked improvement over the estimated 2.3 percent increase in 1975. Persistent problems with completion on schedule of industrial projects and shortcomings in the transport network, principally railroads, apparently were unresolved. And the consumer sector was especially hard hit by aftereffects of the disastrous 1975 harvest, as food and light industry output rose by only 1 percent. On the other hand, heavy industry generally performed well and a record grain harvest of 224 million metric tons and a good harvest of other crops should provide a satisfactory supply of agricultural materials for industry in 1977, except for sunflowers and fruits and vegetables.

Few specific details of the 1977 goals have been published. Industrial growth is to be 5.6 percent, compared with the

average annual rate of 6.5 percent projected in the Tenth Plan. Heavy industry is to grow by 5.9 percent and light industry by 4.9 percent. National income is to increase 4.1 percent and capital investment is to total 121.5 billion rubles, a 3.6 percent rise over 1976. In agriculture, the all-important meat and grain targets are 14.5 and 213 million metric tons, respectively.

Given the slow start of the economy in 1976 and the relatively modest 1977 goals, the Soviets clearly will have to achieve high rates of growth in the remaining years of the Tenth Plan if the overall targets are to be met.

The Soviet Union's total two-way trade reached approximately 56.8 billion rubles (U.S. $76.7 billion at the average official exchange rate of about $1.35) in 1976, up 12 percent, but slightly short of the planned 13.6 percent increase. Soviet exports amounted to 28.0 billion rubles ($37.8 billion) in 1976, a 16.6 percent increase over 1975. Soviet imports, on the other hand, reached 28.8 billion rubles ($38.8 billion) last year, a modest 7.8 percent increase over 1975. This reduced the Soviet trade deficit from 2.6 billion rubles ($3.7 billion) in 1975 to 0.7 billion rubles ($1.0 billion) last year.

U.S.-USSR trade turnover in 1976, according to preliminary U.S. statistics, reached a new record, surpassing $2.5 billion. U.S. exports to the Soviet Union were more than $2.3 billion, an increase of about 25 percent over 1975. Almost $1.5 billion of this was accounted for by agricultural exports, primarily grain. Soviet exports to the United States, on the other hand, reached only $221 million during this time, a 13 percent decrease from 1975.

Trade statistics for 1976 confirm that the Soviet Union considerably improved its trade balance with Western Europe in 1976, partly because the rebound from the low level of economic activity in 1975 led to a strong increase in Soviet exports to the area and partly because of an apparent Soviet effort—abetted by a good harvest—to prevent its imports from rising too rapidly.

Despite this improved export performance, there was an overall hard-currency trade deficit of about $5 billion for 1976 as a result of large imports of Western agricultural products, mainly from the United States. The 1975 hard-currency trade deficit was a record $6.4 billion. It has been estimated that the Soviet Union in 1976 earned perhaps $750 million in invisibles, and the balance of its hard-currency trade deficit was covered by Western credits and sales of gold. The Soviet Union's net indebtedness at the end of 1976 is estimated in excess of $14 billion. Nonetheless, the Soviet Union continues to be regarded as a good credit risk by Western bankers.

Potential demand for imported industrial products greatly exceeds the USSR's hard currency resources. The gap was particularly wide in 1976, when large grain imports ate into a foreign exchange supply already reduced by the Western economic recession, which had lowered demand for Soviet exports. Prospects for imports of equipment and technology are now brighter, however, because a record Soviet grain harvest in 1976 and increased economic activity in the West will, by reducing Soviet agricultural imports and encouraging Soviet exports, increase the pool of hard currency available for purchase of industrial products.

Allocating foreign exchange

Because of foreign exchange stringencies, the Soviet Union tends to restrict its industrial imports from hard currency suppliers to producer goods which have no close Soviet-produced equivalent. In priority areas, however, Soviet planners are willing to spend foreign exchange for a significant difference in quality. These priority sectors include natural resource extraction, the metallurgical and chemical industries, heavy machine building, agricultural equipment and production technology, and high-technology areas such as electronics and data processing. Projects in these areas are now granted the bulk of available foreign exchange.

At the present time the U.S. Export-Import Bank is prohibited from supporting American export sales to the USSR with loans or guarantees. The Soviets will probably continue to insist on credits for compensation projects (see below) and many other large sales, but U.S. firms should be able to conclude most smaller deals either on a cash basis or on short and medium credit terms through commercial banks. American banks have usually shown an interest in participation where financing is necessary, but Soviet officials claim that U.S. firms have lost a considerable volume of orders to foreign competitors because the more favorable Ex-Im financing was not available.

U.S. imports from the USSR do not benefit from the lower Most Favored Nation (MFN) customs duties applied to shipments from most other countries. The U.S.-USSR Trade Agreement of 1972 provided for extension of MFN treatment to Soviet products, but this agreement has never entered into force. Although U.S. exports to the USSR do not face formal tariff barriers of this kind, it seems probable that non-tariff barriers exist. For example, the Soviets have said they are restricting their purchases from American sources where competitors offer similar goods at comparable prices, due to the credit and tariff problems with the United States.

The above considerations still leave considerable scope for U.S. export sales, especially where American manufacturers offer products which have no close Soviet equivalents and which enjoy significant advantages in price and quality over Western competition. As a rule of thumb, if an American firm manufactures products for Soviet priority sectors and is successfully meeting Japanese and Western European competition in other world markets, the firm has favorable prospects for sales to the USSR.

The longer-term outlook is also favorable, as the Soviet leadership has announced its intention to move the USSR more fully into the world economy. Equity investment is still excluded for

SOVIET RAILROADS BUY AMERICAN—*The USSR's railroad system has purchased 26,000 Samson brake shoes from Abex Corp. The shoes, some of which are pictured above, were manufactured by Abex's Railroad Products Group in Meadow Lands, Pa.*

ideological reasons, but Soviet officials are looking for ways to put their industrial organizations into continuing contact with Western companies.

One prominent possibility is the development of so-called compensation projects, where Western firms sell complete industrial plants to the USSR on credit terms and receive payment in product after the plants go on-stream. Several U.S. firms are now exploring possibilities for compensation projects, which appeal to the Soviets because their foreign exchange costs are self-financing. The biggest potential problem appears to be quality control of the end product, but here Soviet officials seem willing to consider some quasi-supervisory role for the Western company to assure product quality. Compensation agreements in high technology areas seem less likely as profitable ventures for Western firms due to relatively long periods before implementation; by the time the new Soviet plants come on-stream some 5-6 years after consummation of the agreement, the product could be outmoded and thus difficult to market in the West. The Ministry of Foreign Trade has a Main Administration for Compensation Projects to coordinate its activities in this field, while the State Committee for Science and Technology recently established a Main Administration for Scientific-Industrial Cooperation, which will attempt to match up projects with Western firms.

Soviet leaders also look to the development of scientific-technical cooperation with Western companies. There appears to be some official dissatisfaction with the slow pace of work under most of the 55 scientific-technical agreements already signed between American firms and the State Committee for Science and Technology. The State Committee still hopes these and other agreements with Western firms will lead to more concrete results. Recognizing that the USSR has had difficulty converting scientific discoveries into viable industrial processes, they may be interested in turning over promising discoveries to Western companies for exploitation in exchange for products or processes developed.

Virtually all Soviet purchases of American products are made by foreign trade organizations subordinate to the Ministry of Foreign Trade at the request of industrial ministries which use the imported products. Concerned about the inefficiencies in this cumbersome system, Soviet officials are now considering possible organizational changes, which will probably increase the role of the industrial ministries in foreign trade. This means that Americans should put renewed emphasis on contacts with potential end-user ministries in developing future business.

The U.S. Commercial Office in Moscow stands ready to advise and assist U.S. business in developing trade with the USSR. The Commercial Office is equipped to provide complete office facilities for visiting business executives. Under its trade promotion program, the following seminar/exhibits will be held in 1977: containerization, May; herbicides and pesticides, May; advanced construction equipment, September; garment manufacturing equipment, October; alumina production and technology, November; and printing and graphic arts equipment, December.

Product lines scheduled to be featured in 1978 include: logging equipment, January; surgical and medical equipment, February; air pollution control equipment, March; machine tools solo exhibit, April; geological and mineral prospecting equipment, May; food processing solo exhibit, June; and Arctic oil and gas exploration/production equipment, September.

Interested firms may contact the Trade Promotion Division, Bureau of East-West Trade, U.S. Department of Commerce, Washington, D.C. 20230, or the U.S. Commercial Office, U.S. Department of State-Moscow, Washington, D.C. 20520.

FUNDAMENTAL CHANGES IN ISRAELI ECONOMY CREATE CHALLENGE, OPPORTUNITY

The United States exporter to Israel has some excellent opportunities to increase sales, but at the same time he should realize that success depends on careful planning of export objectives, advises Richard Rueda, Commercial Officer at the U.S. Embassy in Tel Aviv.

The popular image of the Israeli market is one in which U.S. goods and equipment reign supreme, the only limitation to increased sales being the lack of foreign exchange. This is not the real world. U.S. goods face heavy competition from European and Japanese suppliers that will not diminish in the future. A sharp decrease in the rate of GNP growth during the last few years, a large balance of payments deficit and a high rate of inflation have convinced Israeli policy-makers that the economy must undergo fundamental restructuring during the next few years. It will have to become more export-oriented and less service-inclined than in the past. These anticipated changes present opportunities as well as problems for U.S. exporters.

In the equipment market

The opportunities exist because Israel will be in the market for new equipment to increase production and efficiency in new priority fields such as metalworking and electronics. Fortunately for the United States, Israel is interested in high technology, labor-saving production machinery. The local business buyer looks for machinery with the lowest labor cost per unit of output. Price is, of course, important but is not the overriding issue it is in many other countries. The Israeli investor sometimes is willing to pay a higher price for high reliability and productivity. As the Israeli production horizon moves from a purely domestic market to one encompassing Western Europe and other areas with high market potential, the individual producer's horizon expands accordingly.

This change means that U.S. exporters are faced with the necessity of having a reliable representative to provide after-sale service and support. Spare parts availability is particularly important, as most end-users are reluctant to tie up scarce capital in their own supply of spare parts. European suppliers, of course, have an advantage since they are closer to this market. Still, the key is to have a competent local representative with good contacts in the trade.

A further important factor which favors American sales to Israel is the U.S. commodity import program, which allows Israel to finance many purchases from the United States.

An increased Israeli production horizon presents U.S. firms with an opportunity to take advantage of the policy of the host government of encouraging joint ventures and licensing agreements between foreign and Israeli companies to supply the export as well as domestic market. Israel will not remain merely an importer. It has to become a producer of many items for export. Medical equipment is a good example. Israel imports about $20 million per year of medical equipment. The United States has the major share of the market. But in 1976 Israel exported about $20 million of high technology medical equipment of its own manufacture. U.S. manufacturers could protect their export markets in Israel by entering into licensing or joint venture arrangements with local firms.

Such a choice does not necessarily mean that U.S. companies will be worse off than before. The government has a wide range of financial and fiscal incentives for foreign investors willing to enter into joint ventures. It also provides rather generous financial incentives for exports on a sliding scale depending on the percentage of value-added to the product in Israel. Israel can also be used as a base for sales to the EEC (see below), Iran and to certain African countries. Another favorable factor is that Israeli officials are trained in U.S. business techniques.

During 1976 GNP grew by only 1.5 percent, after a growth of less than 1

percent in 1975. Inflation, as measured by the Consumer Price Index, grew at a 38 percent rate compared to 23.5 percent in 1975. However, exports showed a real increase of 15 percent while imports decreased by a small amount (due in part to inventory reduction) compared to the previous year. Due to these trends, the trade deficit in 1976 decreased by approximately $562 million, rather than the $150 million projected at the beginning of the year. The government's policy of encouraging exports through exchange devaluations and other export incentives contributed to this improvement. It is hoped that this trend will continue, with export-led economic growth accelerating later this year or in early 1978.

Hopes for continued export expansion are based in part on a free trade agreement with the European Common Market and by inauguration of the Generalized System of Preferences by the United States. Starting in July, most Israeli manufactured goods will enter the EEC duty-free. At the same time, EEC exports to Israel will start to be subject to reduced duties on a sliding scale so that at the end of ten years they will enter the country duty-free. Under the GSP, over 2,700 manufactured items from Israel can enter the United States duty-free, subject to certain limits. U.S. firms interested in licensing and joint venture arrangements should keep such market access possibilities in mind.

As explained previously, opportunity for U.S. exporters of manufactured products lies in this export surge. Machinery which can lower costs, increase production or lessen dependence on labor is greatly desired. Government incentives appear to have made exports a very profitable activity. If this trend continues Israel will be interested in obtaining capital goods that can increase its competitive position in the world market.

Priority areas

Israeli authorities have decided that the most advantageous short-run opportunities for major export growth are in electronics and the metalworking field. In general, all exports are encouraged but the government puts emphasis on these two fields and on other sectors involving high technology inputs. Within this overall export policy U.S. exporters have several fields which can afford better than average growth during the next year.

Electronics: In accordance with the emphasis on high technology products, the Israeli market for electronic production and test equipment and electronic components should continue to be a prime growth area. There are no up-to-date figures, but a 1973 market study estimated that imports in all three of these categories would increase from a total of $30 million to $85 million in 1977. This estimate probably underestimates the real growth factor. The requirement for test equipment is particularly large since local industry adheres to U.S. military specifications and there is, therefore, need for high capacity test equipment.

In 1976 Israeli exports of electronic equipment totaled approximately $150 million, an increase of 50 percent over the 1975 total. A market research report is under preparation and should be ready by the end of this year.

Metalworking: Exports of these products increased by about 50 percent in 1976 to a record level of close to $160 million. As a priority export field, and an important defense industry, this sector should continue to provide very interesting selling possibilities for U.S. companies. As an example of the growth of this market, a market study made in early 1974 projected imports of lathes for metalworking of $3 million by 1976; in fact, 1975 imports of such lathes already were $9.5 million.

The United States faces very tough competition from EEC countries, particularly Germany. Many Israeli establishments are equipped with West German machine tools and metalworking equipment dating back to the period when Israel received large reparations payments from Germany. To sell to these firms, U.S. suppliers will have to compete in price and quality.

The Department of Commerce will organize a major trade pavilion at the 1977 Israel International Fair (TECHNOLOGY '77) featuring U.S. metalworking equipment. This event, June 8-15, represents an excellent opportunity to demonstrate to potential buyers the quality of U.S. equipment.

Chemical Processing Equipment: This is another field that has good prospects for U.S. exporters. By 1980 a total of $800 million in new investments will have been made in Israel's chemical industry. Among major projects planned are a soda ash plant, a metallic zinc plant, and styrene plant expansion. Exports of chemical industry products are expected to double by 1980, to $830 million.

U.S. exporters face heavy competition from West Germany, the United Kingdom and Italy for this market. Our share is about 40 percent (out of total imports of about $180 million), but we will face heavier competition as EEC equipment begins to enjoy lower duties in the Israeli market. U.S. equipment is largely purchased for its durability and after-sale service. U.S. prices tend to be higher than European prices and because transportation costs are also higher, U.S. manufacturers must emphasize quality and output rather than price in competing with major European competitors.

Production Process Control Instrumentation: Israel imports about $30 million per year of this equipment. This amount will increase substantially during the next few years. The United States has about 40 percent of the market but European competition (Germany, United Kingdom, Italy) is increasing because of lower prices and gradual improvement in quality and service. To maintain our level U.S. companies must introduce new products, appoint aggressive agents with adequate servicing facilities and, where possible, enter into licensing agreements.

Computers: Because of Israel's great desire to modernize and keep labor costs down, computers are an important field for U.S. exporters. Imports of computers are expected to reach $29 million in 1980. Israel has a small but growing domestic computer industry which is interested in licensing and joint ventures for exporting to Europe, Iran and Africa. Computers and data processing equipment will have growing markets in the government, private industry, and banks as each of these sectors strives to handle increasing paperwork requirements and increase efficiency.

Iran Issues New Regulations For Several Imported Items

The Iranian import-export policy for the Iranian year beginning March 19 makes changes in taxes and status on a number of imported items.

Announced reductions in the Commercial Benefit Tax (CBT) (as distinct from import duties, which have not been changed) are as follows: laying hens (duty eliminated); some cotton yarn, from 50 to 25 rials per kilo; some cotton textiles, from 90 to 70 rials per kilo; space heaters, from 40 to 30 percent ad valorem; meat grinders, from 25 to 20 percent ad valorem, and non-electric refrigerators, from 35 to 15 percent ad valorem. In addition, the Commercial Benefit Tax on offset lead and zinc blocks and on computers has been eliminated.

The CBT was raised on gold imports from free to 5 percent ad valorem; cellophane tapes from 30 to 50 rials per kilo; plastic tapes, from 50 to 90 rials per kilo; and on transformers of 2 KW and less from 25 to 35 percent ad valorem.

Powdered and liquid soup, previously unauthorized for importation, may now be imported with prior approval of the Commerce Ministry. Similarly, imports of garments for medical use will now be authorized. On the other hand, imports of fruit, beef, mutton, fish, a wide variety of man-made yarns, iron and steel pipes, medical equipment and pocket computers will henceforth be allowed only with prior approval of the Ministry.

SWEDES WAIT FOR UPTURN; MARKET PROSPECTS MIXED

The export-led upturn which Swedish planners had counted on in 1976 has been delayed by slower economic recovery abroad than anticipated. The government will continue its full employment policy in 1977, however, in anticipation of an upswing in foreign demand later in the year, reports the U.S. Embassy in Stockholm.

As in the last three years, rising current account deficits will be financed by borrowing abroad, with the difference that this year the government itself has entered the market and has already arranged a $1 billion loan. The government will also attempt to dampen the growth of consumer demand by increasing a variety of indirect taxes and has attempted to persuade labor unions to accept greatly restrained wage increases.

Considerable concern is being expressed that recent losses in Swedish shares of OECD markets reflect more than just cyclical tendencies of Swedish exports. Labor costs play an important role, but it also appears that the recent economic downturn may have highlighted structural problems which have been developing for several years. Government policy is to allow economic forces to dictate the necessary changes, but those impersonal forces can easily conflict with more important goals, such as full employment.

U.S. exports of consumer durables and non-durables should continue to do well in 1977. Exports of capital goods and components will not do so well. Swedish firms will continue to look for ways to offset high labor costs by increasing productivity. Thus, exports of data processing equipment, construction and materials handling equipment, highly automated metalworking equipment (such as industrial robots), engineering and process control instruments and business equipment (especially microfilm and office computer input/output devices) should increase. Aviation/avionics equipment, engines and other mechanical equipment, building supplies and health care equipment are examples of products which have been selling increasingly well in Sweden but may slump in 1977.

Another factor in this situation is that many U.S. firms produce consumer goods for the Swedish market in their European subsidiaries rather than in the United States. Thus, although U.S. autos may be highly competitive, the number of imports does not seem to increase dramatically.

As the U.S. economy gets back on the upward path, it is likely that Swedish exports to the United States (7 percent of Sweden's total exports) will do better, but dampened prospects for Volvo sales will probably keep the current U.S. bilateral trade surplus at about the 1976 level of $250 million.

Restricted availability of credit and high interest rates in Sweden should result in more and more Swedish offerings in the U.S. financial market. It is possible that, in addition to private and municipal borrowers who have already sought capital in the United States, the central government may decide to follow the same path.

The next three years should also see an increase in direct private investment between the two nations. Swedes will be seeking to produce in or nearer their U.S. markets and to reduce labor costs.

At the same time, the Swedes are more amenable to private direct investment from abroad than for some time. Some investors who may have hesitated because of proposals to share business ownership with trade unions (the Meidner Plan) may reconsider now that the plan appears dead for the time being. Co-determination, meanwhile, appears to be proceeding with a minimum of disruption.

Potential investors in Sweden may also be encouraged as the final stage of the EC/EFTA agreement on duty-free trade on industrial goods is reached on July 1 of this year. U.S. exporters to the Common Market may find Swedish exports more competitive, as a result.

Calendar For World Traders

April 13-15—Coral Gables, Fla.—World Trade Institute seminar: Documentation Preparation for Import and Export, University Inn.

April 14—New York—Overseas Automotive Club forum on Problems in our Business, Summit Hotel.

April 15—Bowling Green, Ky.—Seminar on Future of U.S. Business in Latin America, Western Kentucky Univ. Sponsors: Kentucky Department of Commerce, Bowling Green Chamber of Commerce.

April 19—Hartford, Conn.—Seminar on Marketing Opportunities for American Firms in East and West Europe, Sonesta Hotel. Sponsors: Univ. of Connecticut School of Business Administration, Commerce District Office, Connecticut Business and Industry Assn. Commerce speaker: Rauer H. Meyer, Director of the Office of Export Administration in the Bureau of East-West Trade.

April 19—Louisville, Ky.—Univ. of Louisville annual conference. Theme: Kentuckians Look at Developing Countries. Commerce speaker: Robert Foglesong, Asst. Director for Emergent Markets in the Office of International Marketing.

April 19—New York—FCIB Hardware-Automotive & Allied Trades Group luncheon meeting, Summit Hotel.

April 19—Los Angeles—Luncheon meeting of the Brazil California Trade Assn. Information: 213-627-0634.

April 19-21—San Francisco—World Trade Institute seminar: Export Documentation and Traffic, Holiday Inn, Union Square.

April 20—Greenville, S.C.—Greenville-Spartanburg International Trade Club dinner, Textile Hall. Reservations: 803-233-2562.

April 20 and 28—Boston—International Business Center of New England workshop seminar on Export Documentation, Marriott Motor Hotel, Newton. Information: 617-542-0426.

April 21 — Savannah — Georgia Foreign Trade Conference seminar. Larry Terriot of Commerce's Bureau of East-West Trade will discuss Trade With Cuba.

April 21—Chattanooga—National Maritime Council program, Chattanooga Choo Choo. Sponsor: World Trade Council of Chattanooga.

April 21—New York—FCIB Drug, Chemical & Food Export Club luncheon meeting, Summit Hotel.

April 25—Brussels—FCIB International Roundtable conference, Sheraton.

April 25-29—New York—American Management Associations seminar: Fundamentals of International Business.

April 26—Los Angeles—Trade with Near East conference. Sponsors: Los Angeles Area Chamber of Commerce, Commerce District Office. Information: 213-629-0651.

April 27—Rochester—Seminar on Canada: Profits Within Your Reach, Eastman Kodak Marketing and Education Center. Sponsors: Rochester Area Chamber of Commerce, Upstate New York District Export Council, New York State Dept. of Commerce.

April 28-29—New York—Practising Law Institute seminar, International Banking: Current Problems and Challenges, Waldorf Astoria.

Worldwide Business Opportunities

International trade specialists in the Department of Commerce and Foreign Service Officers in the U.S. Embassies and Consulates around the world are continually developing specific commercial opportunities through which American companies can find buyers, agents, partners or investors abroad. One of the major means for communicating these opportunities promptly and accurately to the U.S. business community is through the columns of this magazine.

The section that follows presents details about upcoming trade exhibits and trade missions, licensing and joint venture proposals, opportunities to sell to foreign enterprises, visiting buyers, and details on major construction and expansion projects.

U.S. Promotions Abroad

For more facts on these and other U.S. exhibitions write: Director, Office of International Marketing, Rm. 4015, U.S. Department of Commerce, Washington, D.C. 20230. For trade missions: Rm. 6051, U.S. Department of Commerce, Washington, D.C. 20230.

In-Store Promotion, Georges Australia Ltd. Melbourne. June. Will feature U.S. men's, women's and children's wear, accessories, housewares, household linens, cosmetics and stationery. Store contact: Alan M. Forbes, Mng. Dir., Georges Australia Ltd., 162 Collins St., Melbourne. U.S. buying office: Mutual Buying Syndicate, Attn. Camille Galbo, V.P., 11 W. 42 St., New York, N.Y. 10036. Mollie Cleveland, 202-377-4705.

U.S. Pavilion, 32nd Paris Air Show. June 2-12. Internationally long recognized as the key marketplace for the aerospace industry, the biennial Paris Air Show regularly attracts the largest international audience of industry, government and military aerospace buyers. With the total value of U.S. areospace exports for 1976 estimated to exceed $7.6 billion, the aerospace industry continues to be the largest exporter among U.S. manufacturers. In 1975, the 68 exhibitors in the U.S. Pavilion reported $2.84 million in off-the-floor sales and projected an additional $92.8 million in 12-month sales. Beryl D. Cohen, 202-377-4961.

Industrial Training Aids and Audio-Visual Equipment. U.S. Trade Center, Paris, June 6-9, and U.S. Trade Center, Milan, June 14-17. In recent years consumption of advanced industrial training aids and professional level audio-visual equipment has been increasing dramatically in both France and Italy. Both markets are heavily dependent upon imports to satisfy their individual demands for the more sophisticated equipment, technology, systems and software. The U.S. is a major source of supply and the U.S. market share is increasing steadily in both locations. Current market research has identified several specific product categories that seem particularly likely to benefit from a major U.S. export promotion effort at this time. These unique, tandem, adjacent-country overseas marketing opportunities are being made available to export-minded American firms desiring to penetrate or to increase their current sales volume in two of the world's major markets. Robert J. Blake, 202-377-4605.

Printing & Graphic Arts Equipment Catalog Exhibit. Lagos. June 6-10. The expansion and modernization under way in the printing industry of Nigeria opens new opportunities for U.S. equipment. The printing trade generally regards the U.S. as the innovator and leader in phototype setting and other industry developments. A number of Nigerian entrepreneurs are entering the printing business. Many nationally-known printers are upgrading quality and expanding their printing facilities. The government is expanding operations to increase its output of regularly printed publications from 150 to 260 titles. Although there is no local manufacture of printing and graphic arts equipment, most major publications use fairly sophisticated machines. Many publishing houses have changed to offset machines and photosetting instead of lead setting. Catalog Exhibit Section, 202-377-3973.

Metals Industry Equipment Exhibit at "TECHNOLOGY-77" International Trade Fair, Tel Aviv. June 8-15. The metalworking industry in Israel is characterized by two factors: rapid growth rate in investments, output and export, and a trend towards more sophistication and diversification. The Israeli market for metalworking and finishing equipment expanded by 92 percent during the 1968-72 period, reaching a total of $66.4 million. In 1975 that market hit $90 million and is expected to exceed $110 million in 1978. Franc D. Manzolillo, 202-377-2991.

U.S. Exhibition at "Electro '77." Moscow. June 9-23. The theme of the U.S. exhibition is electrochemical, electricity producing, transmission, and distribution equipment of all kinds. Equipment for the electrical equipment production industry is needed, including automation equipment, test/measurement instruments, and welding equipment. There will be a small section on nuclear and electrotechnical medical equipment. Automated electrical systems for the mining, metallurgy, machine tool, plastics, pulp and paper and agricultural sectors are needed. Call Judith Robinson or Gary Roberson, 202-377-3376 or 4810.

Catering and Fast Food Handling Equipment Exhibition. U.S. Trade Center, London. June 13-17. Recent market research verifies that certain areas such as the public house, cafe and fast food and catering sectors in the hotel and restaurant industry offer worthwhile potential for U.S. suppliers of microwave ovens, convection ovens, dishwashing equipment, waste disposal equipment, soft icecream makers, cook-freeze equipment, bratt pans, commercial barbecue equipment, and water conditioners. U.S. products, considered to be technically superior, have an inherent advantage. A $93 million market in 1976 is projected to grow to $108 million by 1979. George A. Kemp, 202-377-3422.

Electronics Industry Production and Test Equipment (EIPT) Exhibition and Seminar. U.S. Regional Trade Center, Singapore. June 13-17. In Singapore, U.S. firms supply over half of a $9.6 million market (1973-1975 annual average), whose growth is projected to reach $13 million by 1979. Singapore's healthy economic base and rapid development in neighboring Southeast Asian countries make the Singapore regional market for EIPT equipment attractive. Call George I. Middleton, 202-377-2471.

Medical Equipment Catalog Exhibit. Basel. June 14-18. National and local medical programs in Switzerland, rated among the most advanced in Europe, create a solid local demand for the latest in sophisticated biomedical equipment. The local market, currently estimated at $45 million, is growing at a rate of some 14 to 16 percent annually. Except for local production limited to specialized and generally advanced apparatus, imports account for almost all Swiss equipment needs. The U.S. is the second largest supplier of medical equipment to the Swiss market. There are 495 hospitals and over 10,000 doctors, of which approximately 25 percent are private practitioners. Catalog Exhibit Section, 202-377-3973.

Instruments for Analytical Chemistry and Applied Spectroscopy Exhibition. U.S. Trade Center, Tokyo. June 20-24. Japan ranks second only to the U.S. in chemical production with a value of over $14 billion; by 1980 this figure is expected to double. The market for scientific and industrial laboratory equipment to support this production is calculated at over $250 million, with the U.S. capturing more than 50 percent of the sales of imported laboratory instruments. It is anticipated that the need for laboratory instrumentation will increase in relation to production. Tom Welch, 202-377-2896.

Hydraulic, Pneumatic and Advanced Fluid Power Systems, Equipment and Components Technical Sales Seminar. Seoul and Taipei. June 20-26. Korean economic development plans call for significant upgrading of technology within local industry and expansion of key industries in the manufacturing, processing, mining and construction sectors, as well as further expansion of the machinery and petrochemical industries. These developments should provide a strong impetus for continued growth of the Korean market for fluid power and control systems, which is expected to reach $37 million in 1977. Local production is insignificant and Korea must, therefore, rely on imports for its increasing fluid power needs. Taiwan's current Six-Year Economic Development Plan (1976-81) stresses the development of local industry

from labor-intensive to technology-intensive production, as well as the overall upgrading and modernization of machinery and other production equipment. Fluid power equipment has been recognized as an integral factor in attaining these goals because of its variety of applications and because it is regarded as a means of "low-cost automation." Total consumption of fluid power components and equipment increased from $8.7 million in 1973 to $24 million in 1975, some 256 percent. Contact Robert Bucalo, 202-377-4918.

Commercial Fishing Equipment Trade Mission. Ghana, Liberia, Nigeria. June 20-30. Each country has had problems in its fishing industry and plans ambitious programs to stimulate increased domestic production to meet local demand and to earn foreign exchange through exports. Best product opportunities include marine refrigeration, fish processing and fishing equipment, shipboard equipment such as engines, propellers and winches, harbor and dockside equipment including cold storage and fish processing and packaging, oceanographic equipment, offshore equipment, and marine electronics for commercial fishing vessels. Contact Wanda Ale, 202-377-3119.

Printing & Graphic Arts Equipment Catalog Exhibit. Colombia and Ecuador. June 20-July 1. Although relatively unsophisticated, the printing and graphic arts industries in these countries are rapidly developing and growing. Colombia is the fourth largest producer of Spanish-language printed matter in the world, with some 20 large firms and about 1,000 smaller firms. Both large and small organizations are "going offset," although the small firms favor inexpensive offset equipment, or duplicating machines. There is also a limited market for in-house printing in large industries, banks, and government. Ecuador also has about 15-20 large firms and 1,000 small firms in the industry, with 75 percent or more of their equipment antiquated or obsolete. To keep up with the 10 percent overall growth of the Ecuadorean economy, these firms must enlarge and modernize their facilities. Both countries have liberalized their import restrictions and initiated tax reforms aimed at further local development. Catalog Exhibit Section, 202-377-3973.

Agricultural Equipment Catalog Exhibition, "Royal Agricultural Show." Kenilworth, United Kingdom. July 4-7. Britain's farm equipment market is in remarkably good health despite general economic gloom. Imports of this equipment were up 28 percent in the first ten months of 1976, following a record performance the previous year. Britain's farming sector is widely regarded as the most efficient and innovative in Europe. With increased emphasis on "mixed farming," British farmers are looking for new crops and equipment with which to produce them. Poultry producers are moving to the economics of American-style "battery" operations. Specialized machinery is needed to equip expanding domestic production of fruits and vegetables. Conventional farmers are setting aside land for greenhouses and other protected cultivation. Due to mounting energy costs, solar and other energy-saving heating units for greenhouses are of particular interest. The Royal Agricultural Show, where this catalog exhibition will be held, is one of the world's major agricultural exhibitions. The added emphasis on horticultural equipment should make this show even more attractive to U.S. manufacturers of this equipment. Catalog Exhibitions Section, 202-377-3973.

Security and Safety Equipment Exhibition and Seminar. U.S. Trade Center, Sydney. July 11-15. The continent of Australia offers promising sales opportunities to U.S. suppliers of security and safety equipment. Expanding at a buoyant rate, the total market should top $210 million by 1980, with imports accounting for $71 million. This exhibition, specifically recommended by independent research, provides direct access to a growing market. A wide range of product categories of interest to both public and private end-users will be featured. Robert McLaughlin, 202-377-4957.

Furniture Manufacturing and Woodworking Equipment Exhibition and Seminar. U.S. Trade Center, Mexico City. July 12-15. High sales potential and an expanding market exist in Mexico for this U.S. equipment, according to a market survey completed in January. The market survey summary lists most salable products in demand by Mexican plants and valuable statistical data as well as a description of the multimedia pre-exhibit promotional campaign for this event, which will promote selected machinery and equipment encompassing the metal, wood and plastic segments of the furniture and millworking industries. To obtain the survey summary and a listing of services provided to participants, contact C. M. Cummings, 202-377-4463.

Pollution Control Equipment Catalog Exhibition. Caracas and Bogota. July 12-21. Venezuela's 1976 "Environmental Organic Law" is now being implemented with creation of the Ministry of Environmental Matters. Full implementation of this law and enforcement of compliance is expected to stimulate local demand for specialized environmental control equipment and instrumentation, engineering and consulting services, technological assistance and training, etc. Greater emphasis is indicated on control of waste and sewage disposal methods, potential recycling processes, and use of waste treatment by-products, as the recently passed law gives industry tax benefits for investment in pollution control equipment. In Colombia, proposed new legislation establishes a national sanitation code giving the Ministry of Health broad powers in implementing the regulation, with establishment of maximum levels of pollutants in industrial residues, and more effective penalties for plant noncompliance. A healthy market for pollution control equipment already exists, with approximately $5,9 million of sales in 1976 and an 80 percent increase projected by 1980, because of the more stringent sanitation code. Catalog Exhibitions Section, 202-377-3973.

Automotive Diagnostic and Repair Equipment Exhibition. U.S. Trade Center, Tehran. July 17-21. Iran's vehicle population is expected to grow from 1 million in 1976 to 2.1 million by 1980. Domestic production should increase dramatically. Most U.S. and foreign auto/truck manufacturers are already involved in Iranian joint ventures. The number of repair facilities, now estimated at 4,200, is increasing. Iran has limited domestic production capabilities in the diagnostic and repair field and will need substantial imports to satisfy growing demand. Call Bill Monroe, 202-377-2952.

Sporting Goods and Recreation Equipment Exhibition. U.S. Regional Trade Center, Singapore. July 18-22. As the main supplier of goods and equipment to Malaysia and Indonesia, Singapore is a rapidly growing market for sporting goods and recreation equipment. The number one tourist center in Southeast Asia, Singapore's domestic consumption is supplemented by a large tourist trade in sporting equipment. Best prospects for sales are in equipment for water sports, an increasingly lucrative market, and for indoor and outdoor games and sports. With more leisure time, an increasing emphasis on health, and increasing affluence being enjoyed by the people of Singapore, now is the time to enter this diverse and fast growing multi-million dollar market. Todd W. Burns, 202-377-2051.

Electronic Components Exhibition. U.S. Trade Center, Tokyo. July 18-22. The Japanese market for electronic components grew from $2.9 billion in 1975 to approximately $4 billion in 1976. Projections for 1980 indicate a $7 billion market, with imports of $911 million, $200 million from the U.S. During the period 1977-80, Japanese imports of U.S.-manufactured components should total $770 million. The most advanced technology will insure high sales potential for integrated circuits, diodes and rectifiers, transistors, resistors, semiconductor lasers and switches. Cantwell Walsh, 202-377-4399.

Pollution Control Equipment Exhibition. U.S. Trade Center, Taipei. July 18-22. Market research shows expanding requirements for pollution control equipment and instrumentation, both air and water. Total sales of this equipment, US$58 million in 1975, are expected to reach $88 million this year and $191 million in 1980. Newly-decreed enforcement of pollution control legislation is causing sizable expenditures by Taiwan industry. In addition, there is large demand within enforcement agencies for advanced automated instrumentation, including sampling, testing, metering and monitoring instruments. Joseph Burke, 202-377-5402.

Mining and Construction Equipment Trade Mission to Bolivia, Peru and Chile. July 18-30. The mineral and construction sectors in these three Latin American countries are improving after the recent recession and decline of international mineral prices. Chile plans investments of $2.4 billion and $2 billion in the mining and housing sectors, respectively, in the 1976-81 period. U.S. suppliers of mining and construction equipment can look forward to increased demand in all three countries. Typical products represented will be off-highway trucks, excavators, drilling equipment, motor graders, mineral classification machinery, crushers, compressors, dozers, rod mills and pneumatic shovels. Geoffrey H. Walser, 202-377-2973.

Industrial Process Controls and Instrumentation Exhibit. Caracas. July 25-30. Venezuela, buoyed by oil income, is attempting to establish a modern industrial economy in the shortest possible time. Industrial process controls will be playing a major part in this development. By 1978 at least 90 percent of process control requirements will still be filled by imports and U.S. manufacturers are expected to hold a 64 percent share of the $32 million market; this is equal to a 16 percent annual growth rate over the $15 million imported in 1975. Hans J. Amrhein, 202-377-2332.

Agricultural & Food Processing & Packaging Equipment Exhibition—AGRIQUIP '77. Jakarta. Aug. 1-5. The Indonesian Government is giving priority to agriculture, i.e., the reduction of food imports and increase of export earnings from agricultural and processing operations, together with implementation of the Second Five-Year Plan, which allocates $2.4 billion for these purposes. Imports of agricultural equipment (excluding forestry) are expected to rise from $7.0 million in 1975 to $17.3 million in 1980, while FPP machinery should rise from $41.6 million to $80.8 million during that period. The market ranges from basic agricultural equipment to plastic packaging machinery. Ronald E. McCowen, 202-377-3560.

Building Construction Equipment and Supplies Catalog Exhibition. Sudan and Nigeria. Aug. 2-9. Nigeria's $49 billion national development plan now under way includes plans to build 150,000 primary schools, 800 secondary schools, four new universities, 1800 primary health centers, and a communications center, roads and utilities. In the Sudan, new hotels and tourist lodges have previously constituted the main building construction activity, but beginning in June, the country's new Six-Year Economic and Social Development Plan will be implemented to complement the industrialization of agriculture by providing new processing plants for cotton, tea and coffee, and a major investment in basic services in hospitals, schools and housing. Catalog Exhibitions Section, 202-377-3973.

Chemical / Petrochemical Production Equipment Catalog Exhibition. Korea and Taiwan. Aug. 8-19. Both countries have established strong and buoyant chemical and petrochemical industries in the last 15 years. Approximately 80 percent of the equipment needs of Taiwan's petrochemical industry is imported. U.S. manufacturers enjoy 30 percent of this market, totaling about $20 million annually, involving mostly industrial process controls and instrumentation. A spectacular three-fold increase is noted in U.S. exports to Korea—principally control instruments and valves—from 1974 to 1975, when sales rose from $1.3 million to $3.85 million. Catalog Exhibitions Section, 202-377-3973.

Graphic Industries Equipment Exhibition and Seminars. U.S. Trade Center, Mexico City. Aug. 15-19. The sales outlook for printing and graphic arts equipment in Mexico is very good. An extensive market survey identifies a diversified list of graphic equipment with best sales opportunities through 1981. Cumulative import sales for the next five years are estimated to top $264 million, a healthy annual growth rate of 15.5 percent. Sales by U.S. manufacturers will double and reach $41.1 million in 1981, for a market share of 57.8 percent. In 1976, Mexico imported an estimated $38 billion worth of graphic equipment. Over 50 percent, or $20.7 million, was U.S. Although there is increasing competition from European manufacturers, the outlook is for U.S. manufacturers to retain and strengthen their share. The Mexican graphic industry is interested in new technology and replacement equipment to modernize, improve efficiency, and reduce costs. Equipment such as typesetting and typemaking, printing, bookbinding and photographic will continue to offer strong sales prospects. To obtain a complete information kit including a summary of the 1977 market research, and a full description of the exhibition and strong promotional campaign for participants, contact: Dan Chambers, 202-377-4463.

Metalworking Machinery and Equipment (METALQUIPOS '77). Caracas. Aug. 29-Sept. 3. A 50 percent annual growth is expected over next three years in U.S. sales of metalworking machinery to Venezuela as that oil-rich country begins to invest $13 billion in metal-producing, automotive, tractor, ship repair, and home appliance industries. Exhibitors will receive full range of marketing services, including booth design and construction, VIP reception, extensive market promotion campaign. Hans J. Amrhein, 202-377-2332.

CHEMISTRY '77. Moscow. Sept. 1-15. The 10th Soviet Five-Year Plan (1976-80) stipulates increases in industrial production of 35-39 percent and a growth rate in the chemical/petrochemical industry of 60-65 percent—50 percent higher than that of industry overall. The Soviets are placing top emphasis on agricultural chemicals to help boost farm output. Heavy concentration is planned on increasing fertilizers, insecticides, herbicides and other plant-protection chemical products. In addition, the plan calls for satisfying consumer needs. These include increases in production of synthetic resins and fibers, plastics, synthetic rubber and tires, magnetic film, electrical insulating materials, cleaning materials, textile dyes, polymer additives, plastic wraps, and other packaging materials. Call Tony Bilecky, 202-377-2801.

General Industrial and Agricultural Equipment. U.S. Exhibition at 33rd Plovdiv International Fair. Sept. 3-10. Agriculture, a vital sector in the Bulgarian economy, will expand 20 percent during the new plan period (1976-80). A full range of farm equipment is desired. Substantial potential demand exists for U.S. industrial equipment and high technology products such as materials handling equipment, machine tools, automated equipment, and all classes of multiple operation machines superior to European equipment. Reginald Beckham, 202-377-2802.

Hotel, Institutional and Restaurant Equipment Exhibition. U.S. Trade Center, Taipei. Sept. 5-9. This market will expand rapidly over the next five years. Research indicates that food preparation and service equipment, administrative service equipment, furniture and decor, and security and safety equipment will expand from $329 million in 1976 to $402 million in 1979. The hotel sector will receive great momentum from $153 million in government expenditures on tourism over the life of the Six-Year Development Plan. Call William W. Zamula, 202-377-4227.

Electronic Industry Production and Test Equipment Exhibition. U.S. Trade Center, Mexico City. Sept. 6-9. Rapid sales growth of electronic components, radio and TV receivers and communications equipment has made Mexico one of the top ten foreign markets for EIPT equipment. Exclusive of the border industries program, Mexican demand for EIPT equipment has grown 10 percent annually and is projected to rise to $17 million by 1979. Some $14 million of this demand will be met by imports. U.S. manufacturers of this equipment command a 70 percent share of Mexico's total EIPT imports. Mary R. Wiening, 202-377-2313.

Computer and Peripheral Equipment Catalog Exhibition, at "INELTEC Fair." Basel. Sept. 6-10. The Swiss market for this equipment is expected to maintain an annual increase of 9 percent for the remainder of the decade, reaching $175 million in 1980. Imports constitute most of this market. U.S. exports of this equipment to Switzerland were approximately $45 million in 1975 and are projected to rise to around $70 million by 1980. Sales of mini-computers and peripherals are most dynamic, with the former expected to almost double between 1975 and 1980. Exceptional demand is anticipated for advanced entry, output and storage devices, as well as terminals. Sales of small, medium and large computer systems will chiefly represent demand for replacement and modernization of existing installations. It is estimated that 400 new systems will be added in the latter half of the decade, with an estimated annual replacement volume of 200 to 300 systems within the same period. The INELTEC Fair is one of the largest in Europe and is expected to draw well over 30,000 visitors. Catalog Exhibitions Section, 202-377-3973.

Process Control and Instrumentation Exhibition. U.S. Trade Center, Sao Paulo. Sept. 12-16. The Brazilian market for industrial process control equipment has shown remarkable growth in the past and should maintain a strong pace. Brazil imports 90 percent of its process control and instrumentation equipment, and the U.S. enjoys a 50 percent share. Between 1973 and 1975 imports went from $24 million to $48.5 million. Forecasts for 1978 estimate total imports to reach $60 million. Bill Vigneault, 202-377-5427.

Advanced Medical, Surgical, and Dental Equipment—Brno Engineering Fair. Sept. 14-22. Czechoslovakia plans to upgrade the level of medical services to its general population through 1980. Advanced medical research equipment, examination and diagnostic instruments, blood and organ analysis instruments, sophisticated surgical equipment, advanced life support systems, and radiological diagnostic and treatment equipment all have good potential. Gary Roberson, 202-377-3376.

Building Products and Systems Exhibition and Seminar. U.S. Regional Trade Center, Singapore. Sept. 19-23. Total imports of building and construction products and equipment into Singapore increased over two times from 1972 to 1976. Projections indicate another two-fold gain by 1980, with the market reaching $1.7 billion. Imports of building products and systems have followed the same pattern, more than doubling from 1972 to 1976, and seen totaling almost $1 billion by 1980. U.S. exports of special building materials and equipment are expected to increase phenomenally due to regional and local affluence and sophistication and the quality, standards, variety and modernity of U.S. manufacturers. Contact J. Lee Barnes, 202-377-3893.

Air and Water Pollution Control Technical Sales Seminar. Austria, Poland and Hungary. Sept. 19-30. All three countries have policies which aim at upgrading air and water quality. Best sales prospects for U.S. firms include biological water purification systems, scrubbers and precipitators to remove pollutants from smoke stack emissions, water quality control systems, equipment to measure air quality and pollution from automobile exhausts, and instrumentation from re-

search institutions. Alice Clark, 202-377-2348.

Instrumentation Catalog Exhibition at "HET Instruments Fair." Amsterdam. Sept. 21-29. The Netherlands is an excellent market for all four categories of instruments and related equipment being promoted at this exhibition: scientific and industrial laboratory instruments; biomedical and clinical instruments; process control instruments; and electronics industry production and test instruments and components. Imports supply about half of the Netherlands' instrumentation requirements. The U.S. is one of the leading exporters of this equipment to Holland, especially in electronics industry production and test equipment, where we supply over half of the total market. The greatest increase among these four categories is in process control instrumentation, which is projected to hold at a steady increase of 15 percent per year. The HET Instruments Fair is expected to draw close to 50,000 visitors from all over Europe. This catalog exhibition provides an inexpensive means for U.S. manufacturers to test the strong Dutch market and to gain exposure throughout Europe. Catalog Exhibitions Section, 202-377-3973.

SPOGA 77—Sporting and Camping Equipment. Cologne, Germany. Sept. 25-27. Considered the world's major international exhibition for sporting and camping equipment. SPOGA 76 hosted more than 1,915 exhibitors from 35 countries and, in only three days, attracted 42,800 trade visitors from 70 countries. Commerce's pavilion will accommodate 40 U.S. manufacturers. Call Loretta Allison, 202-377-3748.

Automated Construction Seminar Exhibit. U.S. Commercial Office, Moscow. Sept. 26-30. The 10th Soviet Five-Year Plan (1976-80) calls for increased mechanization in all phases of construction, particularly in finishing operations. Construction of at least 545 million sq. meters of housing, and schools to accommodate an additional 8 million children, is planned. Output of building materials is to increase by 30 percent. Area of greatest Soviet interest is equipment and technology to improve methods of construction with concrete and beautify results. Also of interest is equipment for finishing work, light protective exteriors, thermal insulation materials, floor coatings, and restoration of buildings damaged by earthquakes. Jim Robb, 202-377-4810.

Advanced Business Equipment and Systems Exhibition. U.S. Trade Center, Tokyo. Sept. 26-30. The Japanese market for such products was $975.5 million in 1974, and the forecast for 1979 is $1.5 billion. Japanese imports are estimated at $208 million for 1979, of which the U.S. share will reach $125 million. Featured will be labor-saving office equipment and systems which save time, cut costs, accommodate the Japanese shift to multinational enterprise and meet the exacting demands of the expanding Japanese information processing community. Robert Levine, 202-377-4379.

Telecommunications, Radio and Television Equipment Exhibition. Caracas. Sept. 26-Oct. 1. Venezuela, because of expanding requirements for imported telecommunications equipment, offers an attractive market. Apparent consumption of telecommunications equipment in Venezuela in 1976 was $172 million, projected to grow to $222 million by 1979. Hans J. Amrhein, 202-377-2332 or 4831.

Licensing, Investment Abroad

Licensing and investment proposals from foreign firms are listed in these columns. Specific product interests in each proposal are highlighted in bold type to facilitate identification and each proposal is preceded by the appropriate four-digit product number taken from the Standard Industrial Classification (SIC) Manual.

Background information on opportunities abroad and assistance on overseas investments are available from the Overseas Products and Investment Opportunities Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. "P" numbers should be used when responding to any of the specific proposals listed.

WTDR indicates that a World Traders Data Report containing financial and background information on the foreign firm is available for $15 from the Export Information Division, Room 1033, U.S. Department of Commerce, Washington, D.C. 20230. WTDR request forms may be obtained from any Commerce District Office.

OPIC indicates that the country involved is eligible for investment insurance coverage and financing from the Overseas Private Investment Corporation. Information regarding applicable coverage may be obtained from OPIC, Washington, D.C. 20527.

GERMANY—Leading West German producer, distributor, exporter of unprocessed and crushed natural stones, seeks modern technical know-how and licensing agreements in processing of **natural hard stones.** Founded in 1906, firm produces various types of natural stones, e.g., basalt, diallage rock, diabase. Employs 500. Gerhard Loechner, Mktng. Mgr., Mittledeutsche Hartstein Industries A.G., Weserstrasse 63; D-6000 Frankfurt/Main; telephone, 0611-235651-3; telex, 0414565. Cable: MHIBASALT FRANKFURT-MAIN. P-77291.

1021, 1031, 1041—MEXICO—Seeks joint venture partners to exploit **two mines:** (1) 150 hectares containing **galena, antimony, zinc, gold and copper;** (2) 200 hectares containing **copper and silver.** Lic. Salvador Castellanos M., Lima No. 11, Fracc. Jardines Del Cupatitzio, Uruapan, Michoacan; telephone, 2-08-56. P-77267.

1452—GREECE—Seeks financing (either by direct loan or in equipment or services) and/or joint venture collaboration to develop **bentonite mine** on island of Milos and to process mineral for sale to drilling, pelletizing, foundry industries. Mine site covers 87 acres, is claimed to contain deposit 50 to 60 m. thick with estimated reserves of 10 million t. Type, quality of ore reportedly similar to Wyoming bentonite. Mine lessor is group of medium-sized companies established 1968 operating as general contractors, engineers for construction of public works, industrial buildings, mechanical installations. Group has permanent staff of 16; annual sales, $1.7 million. Nicholas Giatracos, Mng. Dir., Giatracos Group, 57 Panepistimiou Ave., Athens 131; telex, 216003 GIAT GR; telephone, 3243228, 3243232. WTDR. P-77280. OPIC.

1500—PORTUGAL—Seeks U.S. patented **post-positioning system, preferably strand system** for construction of pre-fabricated housing, commercial and industrial buildings, other construction works. Details such as royalties, other conditions open for negotiation. Established 1954; operates as light, medium and heavy concrete pre-fabrication contractors; employs 950. Firm's annual turnover is estimated at $16.66 million. Engineer Alvaro Fernandes, Planning Dept. Dir., SOMAPRE—Sociedade Materials Pre-esforcados, SARL 83-2 Av. da Republica, Lisbon 1; telex, 16592-SOMLIS-P; telephone, 760045. P-77300.

2011—ARGENTINA—In keeping with National Government policy of restoring to private ownership all food industry activities, Argentine Judical System is calling for public international tenders for sale of large **industrial meat packing complex,** "Compania Swift de La Plata S.A. Frigorifica", Sarmiento 443, 1041 Buenos Aires; telex, SWIFTCIA. Swift is to be sold with its industrial plants and commercial distribution in full operation, served by highly qualified staff. Swift is also producer of variety of food products; is one of largest suppliers of food items in Argentine market. Its basic selling price is 12.000.000.000 Argentine pesos with down payment of 30% cash and remaining amount in 14½ yearly periods adjustable, with 6% annual interest on balance. Bidding documents available through May 20; cost, $1,500. Brochures describing industrial complex and bidding documents may be obtained by contacting Dr. Carlos Bochert, Economic and Commercial Minister, Embassy of the Argentine Republic, 1600 New Hampshire Ave. NW., Washington, D.C. 20009. Telephone: 202-332-7100, ext. 55. P-77301.

2451, 3448—AUSTRALIA—Seeks licenses to manufacture **prefabricated dwelling units and larger mobile homes.** Will also consider joint venture. Firm anticipates that some components will be imported. Company is real estate developer; also manufactures slaughterhouse equipment. Plans to develop chain of mobile home parks. Company official to visit U.S. this summer to meet with interested American businessmen, visit mobile home parks. Malcolm G. Percival, Percival Engineering Pty. Ltd., P.O. Box 74, Hamilton Central, Qld., 4007. WTDR. P-77268.

2522—TRINIDAD & TOBAGO—Established firm of wholesalers and sales agents, handling office equipment and general office furnishings, is interested in setting up joint venture with American company to manufacture full line of **metal office furnishings.** Arnold G. Mendes, Process Equipment Co., Ltd., Picton & Eastern Main Roads, Laventille, Trinidad, W.I.; phone, 62-35340; cable, PROCOL, Port of Spain. P-77258. OPIC.

2642 — NIGERIA — Interested in joint venture to manufacture **envelopes, school notebooks, office paper products.** Firm seeks technology, equipment, management from U.S. participant; will raise necessary financing from local sources. Is presently engaged in distribution of stationery items. D. A. Obakoya, Chmn./

Mng. Dir., Niyi Office Stationery Supply Stores Ltd., 16 Johnson St., Ilupeju Industrial Estate, P.O. Box 1086, Lagos. P-77259.

2834, 2844, 2879—HONDURAS—Seeks licenses to manufacture proven, high quality items in following fields: (1) **Tonics, medicinal wines;** (2) **non-prescription household medical preparations** such as for infant care, mouth hygiene, treatment of minor discomforts; (3) **general body care products** such as bath additives, shampoos, deodorants, similar lines; (4) **chemicals** such as household pesticides, repellants which could be purchased in bulk and easily mixed, packaged for retail sale. Firm operates as importer, distributor, manufacturer of some of above items and wishes to diversify; employs 50 people; annual sales, $500,000. J. Leonardo Godoy, Industrias Vinicolas Godoy, Laboratorios Union, Barrio La Isla, Calle America 7, La Ceiba, Atlantida. P-77284. OPIC.

2834, 2844—SPAIN—Seeks licenses to manufacture **pharmaceuticals, perfumes, cosmetics.** Firm currently produces those items; reports annual sales of 212 million pesetas. Sales territory includes Europe and Latin America. Andres Garcia Rubio, Mng. Dir., Laboratorios Biologia Marina, S.A., Ctra. Alicante-Valencia, Km. 88,700, San Juan de Alicante, Alicante. P-77269.

3079—SWITZERLAND—Seeks licenses to produce **new plastic packaging for use by pharmaceutical, cosmetic industries.** Especially interested in plastic bottles with hermetically sealed closures, also plastic containers up to volume of 12 liters. Established 1959, firm employs 60; has highly automated plant capable of handling advanced processes. Manufactures plastic packaging for pharmaceutical, cosmetics industries. Hermann Spinnler, Cheddite-Plastic AG, 4410 Liestal. Telephone, 061/ 91 91 91; telex, 63 266. P-77270.

3079, 3829, 3545, 3544—SWITZERLAND—Watch manufacturer seeks licensing or subcontract arrangement for production of **metal, plastic or electronic products.** Established 1853; employs 700; annual sales, $30 million. Firm is part of Switzerland's second largest watchmaking group. It seeks to diversify production in plastics injection, optics, electronics, test and measuring instruments, dashboard and aircraft instruments, precision mechanical products, tools and diemaking, and similar products with high labor-added value. Firm equipped with modern manufacturing facilities, electronic department, plant specializing in fabrication of high precision plastic parts. Depending on type of products for which licensing arrangement is being considered, Swiss firm's distribution network could be used. Gustav E. Seewer, Marketing & Diversification, ICME, Bellariastrasse 51, 8038 Zurich. P-77297.

3229—SUDAN—Sudanese firm has prepared feasibility study and obtained all necessary licenses for $2½ million glass factory in Port Sudan. Foreign exchange component of project is $1 million. Planned annual production is 14 million units of various **glasswares with window glass production to be aded within** two years. Initially, all production is for domestic market; 95% of required raw materials are available in the Port Sudan area. Firm is seeking equity financing or joint venture partner. Interested firms should contact: Sayed Mohammed Sidki, Eastern Trading Agency, P.O. Box 76, Port Sudan. WTDR. P-77294. OPIC.

3272—GERMANY—Seeks technical assistance and licenses for processing of **natural hard stone and exposed aggregate concrete.** Founded in 1898 as producer, distributor of unprocessed and crushed natural hard stones (basalt) and exposed aggregate concrete. These products are used in building industries, and for construction of highways, waterways for pavements, home and gardening. Otto Hoffman, Dir., Basalt-Actien-Gesellschaft (BAG), D-5460 Linz/Rhein; telephone, 02644-511; telex, 861510; cable, BASALT LINZ RHEINLEHMANN. P-77290.

3272—SAUDI ARABIA—Seeks joint venture partner to establish **plant for concrete prefabricated housing** outside city limits of Mecca. Estimated market is 4,000 housing units in Mecca area. Capital intensive plant is desired. Interested firms should send projected cost of factory, specifications, estimated cost per sq. m. of housing. Dabir Ahmed Vahidy, P.O. Box 1145, Mecca, P-77271. OPIC.

3312, 3469—GERMANY—Firm wishes to expand its production program and is seeking licenses from U.S. rolling mills for manufacture of **stainles steel, other metal stampings, drawn metal parts.** Firm employs 1,200. Werner Fangmeier, Vereinigte Deutsche Nickelwerke AG, 5840 Schwerte 1. P-77272.

3322—GERMANY—Established malleable and grey iron foundry which produces **customized and standard castings for industrial, agricultural, electrical, construction machinery as well as for Federal Railway System,** wishes to expand its production and is seeking licensing agreements to manufacture similar but new-to-German market castings. Employs 225. Dieter Voss, Joh. Casp. Post Soehne GmbH & Co., Postfach 4209, Eilper Strasse 44-64, 5800 Hagen. P-77273.

3356—FRANCE—Manufacturer of **metal flexible tubing and accessories for industrial use** (building, heating, air conditioning, electrical automobile, metallurgical, chemical, oil, mechanical industries) seeks licensing rights to manufacture products using similar technology. Employs 365. Mr. Guillemot, Commercial Mgr., Tubest, 6 Rue Euler, 75008 Paris; cable, TUBEST PARIS; telephone, 723-4301. P-77281.

3412, 3714—KOREA—Firm seeks technological know-how for manufacture of **automotive wire spokes and steel, dry containers for ocean freight.** Is member of Hyundai Business Group which includes Hyundai Shipbuilding & Heavy Industries Co., Ltd., and Hyundai Construction Co., Ltd. Company manufactures, distributes automotive parts, wheels, filters, bumpers, special trucks. It plans to manufacture 200,000 automobile wire spokes for export and 2,400 containers during second half of 1977. Firm is capitalized at $1,225 million, employs 700. Kyu-Suk Chung, Sales Mgr., Hyundai Motor Service Co., Ltd., C.P.O. Box 3325, Seoul 100; telephone, 71-5111/8; cable, HYUNDAI SERVICE SEOUL; telex, K2338 HDMOSVC. WTDR. P-77295. OPIC.

3429—FRANCE—Major French manufacturer of **metal handles and fittings for doors and windows,** is seeking collaboration with comparable U.S. firm for two-way exchange of products and/or licensing arrangement. Company employs 500, reports annual sales of about $10 million. Mr. Delaporte, Bezault S.A., 49160 Longue; telex, 720131. WTDR. P-77283.

3433—ZAMBIA—Seeks joint venture to produce, market **solar heating systems.** Interested in obtaining technology, management expertise. Believes there is significant export potential throughout Africa, because of reduced heating costs of solar systems. Firm is U.K. company operating in Commonwealth member countries. Regional Controller, Commonwealth Development Corporation, Standard Bank Bldg., Cairo Road, P.O. Box 2000, Lusaka. P-77287. OPIC.

3494, 3561—FRANCE—Manufacturer of boiler works in stainless steel and special metals seeks licensing agreements to produce material used in chemical, nuclear and aircraft industries such as **pumps, reactor vessels, valves, special pipes.** Company sells throughout France, United Kingdom, West Germany. Employs 350. L. Yven, Commercial Mgr., Ets. Jean Berthier, 2, rue du Mont Luisant, 78630 Orgeval; telephone, 975-9840. P-77282.

3494—GERMANY—Importer, distributor, exporter of special alloy steel mill products such as **fittings, T-shapes, caps, reducers, flanges, piping materials,** for use in chemical plants, oil refineries and especially nuclear power plants wishes to expand his distribution with complimentary lines. Established 1952, employs 50. Sales territory includes Europe, Near East. Dieter Rueping, Mgr., c/o Anderson KG, Postfach 1078, Hesslingsweg 71, 4600 Dortmund 1; telex 822425. P-77274.

3500—AUSTRIA—Seeks licenses to produce **hydraulic pumps and motors, dump truck bodies, high pressure hydraulic products, agricultural machinery and equipment, fittings and hinges.** Firm has excess production capacity, will consider licenses for all types of equipment in general areas listed above. Is large manufacturer of equipment for chemical, construction, mining industries. Makes feeders, dumpers, conveyors, dumper systems, other equipment. Has subsidiaries in West Germany, Switzerland, Sweden; markets throughout Europe. Interested U.S. firms can contact Helmuth Leihs, IFE GmbH, Patertal 20, A-3340 Waidhofen/Ybbs, or IFE Systems, Inc., 65 North Maple Ave., Ridgewood, N.J. 07451. Companies responding to this opportunity are requested to send copies of their correspondence to U.S. Embassy, 1X Boltzmanngasse 16, A-1091, Vienna. P-77260.

3500—BELGIUM—Firm is interested in representing **U.S. manufacturers of heavy equipment such as turbines in Benelux countries.** Already represents large American producers of heavy machinery. Ms. Doris Atkind, Trade Promotion Officer, European-American Bank & Trust Co., 10 Hanover Sq., New York 10005. P-77292.

3500—ITALY—A leading manufacturer of brick and tile making machinery offers its **production facilities and direct after sales assistance in Europe, Middle East, North Africa** to U.S. firms. Company is well equipped for large scale manufacture of **heavy machinery** ranging from special industry machinery to construction and mining equipment. Operates a cast iron factory, metalworking department, assembly shop. Firm estimates it could make available maximum of 150,000 man hours annually to produce complete units and/or components on subcontract or similar basis. Employs 500; 1976 sales, over $14 million. Ing. Mario Olindo, Via Copernico 4, 10025 Pino Torinese (Torino). WTDR. P-77275.

3523—FRANCE—Seeks licenses to produce **small public works, agricultural (soya harvesting machinery), materials handling equipment.** Established 1850, company employs 400; presently makes

materials handling, farm machinery. Michel Foussard, Mgr., Gustin Fils S.A., Deville, 08800 Montherme; telephone, 34 36 31; telex, 840 027. P-77288.

3523—GERMANY—Leading manufacturer of lawn and garden care equipment such as **lawn mowers, lawn sweepers, lawn edge cutters,** is interested in novelties in this field to complete its distribution program. U.S. manufacturers of new-to-market equipment interested in appointing an exclusive distributor or in granting licenses for manufacture in Germany should contact: Werner Schemmer, Sales Mgr., c/o Gebr. Brill Gartengeraete, Postfach 3160, Daermannsbusch 7, 5810 Witten-Herbede. Telex, 8229147. P-77276.

3559 — UNITED KINGDOM — Seeks licenses to manufacture **oilfield equipment** under license. Established 1948, company employs 70; annual sales, 750,000 pounds. Is general and service engineering company for oilfield equipment; also manufactures jigs, tools, fish processing and fishing equipment. John Watt, Aberdeen Jig & Tool Co. Ltd., Craigshaw Crescent, West Tullos, Aberdeen AB9 2TB, Scotland. P-77261.

3561—GERMANY—Very large company seeks licenses to manufacture **medium and high pressure pumps, one or multi flow, spiral casing, horizontal and vertical for water, oil.** License would cover all countries except U.S. Agreement would complete German firm's production program of single- and multi-stage propeller pumps, mixed flow pumps, reflux valves, axial pumps and bell type impeller pumps. Company is important manufacturer of commercial vehicles, marine propulsion units, other products. Has number of plants, affiliates. Excellent worldwide operation. Write: Commerical Section, U.S. Consulate General, Munich. P-77262.

3564—GERMANY—Small manufacturer of sheet-metal products seeks licensing arrangement to manufacture **dust control and exhaust systems, aeration and ventilation equipment.** Is looking for medium-sized companies. Firm reportedly has good contact with metal and steel working industry, machine tool manufacturers, plastic and woodworking industry, electrical, glass and ceramic industry. Herr Hirrlinger, Mgr., E. Richard Koehler GmbH & Co., Maschinenfabrik, Porschestrasse 40, D-7000 Stuttgart 40; telephone, 0711/823091; telex, 07-21867. WTDR. P-77263.

3564—GERMANY—Seeks license, technology to produce **air purification processes.** Company presently manufactures air filters, other dust collecting equipment. Employs around 1,000; annual sales, $40 million. D. Jentzsch, CEAGFILTER und Entstaubungstechnik GmbH, Muensterstrasse 231, 4600 Dortmund. P-77286.

3569—GERMANY—Interested in **cross licensing arrangements with U.S. firms in the field of hydraulic motors and swivel gears.** Company is large manufacturer, distributor of hydraulic motors, swivel gears, related products. Employs 550, enjoys good commercial reputation. Reinhard Pott, Paul Pleiger Maschinenfabrik, Postfach 3340, 5810 Witten 3. P-77277.

3570—FRANCE—Seeks licensing rights for such office equipment as **teleprinter units, teletypewriters, banking equipment, electric stapling machines, time recording machines, mailing and addressing machines, dictating equipment and photocopying machines.** Firm produces, distributes office equipment. Employs 520, plus 120 representatives. D. Valin, Commercial Mgr., Societe des Machines Havas, 83 blvd. de Sebastopol, 75002 Paris. P-77293.

3585—FRANCE—Small manufacturer of special refrigeration cabinets for bakeries seeks to expand product line. Is interested in license to make **highly specialized refrigeration equipment.** Marketing operation covers France, Switzerland. Has 25 employees. M. Lacharme, Mgr., P. Pont S.A., 447 Blvd. Albert Camus, 69400 Villefranche. P-77289.

3589—SWITZERLAND—Swiss subsidiary of important German manufacturer seeks licenses or similar agreements to produce **industrial waste water and municipal sewage purification equipment; solid waste and garbage treatment machinery; traffic signs, signals, systems; advertising, display, general screen printing apparatus; materials handling and storage automation equipment.** Company also offers know-how in screen printing, advertising, traffic signs; has developed system for composting sewage sludge. Parent company employs 700, is interested in joining American companies for third world projects. F. Suess, Dambach Aktiengesellschaft, Geschaeftshaus "Loewen", P.O. Box OH-6312 Steinhausen. P-77265.

3612—GERMANY—Leading firm in construction of telecommunication networks seeks licensing arrangements to produce **tools and equipment for transmission line construction.** Presently supplies Federal institutions such as post offices, defense forces, railway, and large enterprises with internal communication systems. Established 1953, employs 300. G. Meckbach, Walter Rose KG, Spezialunternehmen fuer Fernmeldetechnik, z. Hd., Postfach 2928, Luetkenheider Str. 2, 5800 Hagen. P-77278.

3629—KOREA—Seeks technical know-how to manufacture **rectifiers** including those in 30,000-50,000 amp. class. Firm produces regulators, inverters, other electrical items. In 1976 imported $400,000 worth of silicon diodes, thyristors and inverters. Employs 150, including 12 salesmen. Hui-Yol Kim, Dir., E-HWA Electric Mfg. Co., Ltd., P.O. Box 66, Sungdong, Seoul 133. Cable, EHWA BAE, Seoul; telephone, 46-2551/5. WTDR. P-77264. OPIC.

3715—AUSTRALIA—Medium size firm seeks licensing arrangement to manufacture **communications shelter vans** to U.S., Australian military specifications. Would also consider assembly operation. Firm presently produces ambulances. R. Dallas, Mng. Dir., Superior Motor Body Works, Box 105, Nundah Qld., 4000. WTDR. P-77279.

3822—FRANCE—Manufacturer of thermostats, emission control devices, thermostatic valves for central heating, seeks licensing rights for production of **temperature controls, emission control devices.** Established 1927; employs 250. Correspondence may be in English. Robert L. Frank, Mgr., Procedes Vernet S.A., 21-27 Route D'Arpajon, Ollainville, 91290 Arpajon. P-77298.

3829—UNITED KINGDOM—Producer of "Thermodial" **bi-metal type/electronic thermometers, and vitreous enamel dials/pictures/portraits/jewelry on base precious metals,** is seeking licensing agreements for manufacture of similar items. J. F. W. Miller, Mng. Dir., F. W. Miller & Co., Ltd., Milarna Works, 66/68 Nansen Road, Sparkhill, Birmingham B11 4 DU, England. P-77299.

3842, 3841—FRANCE—Manufacturer of anti-explosive equipment for mining and chemical industries is seeking licensing agreements for production of **medical equipment,** e.g., laboratory and scientific instruments, apparatus; surgical and medical instruments, sundries; massage machines; ophthalmic goods. Firm also manufactures medical equipment and makes electric installations for large companies, public and governmental organizations. Established 1921; employs 350. Mr. Renaud, Societe Alsacienne d'Installations Techniques, 10 rue du Zornhoff, 67700 Saverne; telex, 870725 F; telephone, (88) 91.32.21. P-77296.

3952 — LIBERIA — Recently established company seeks joint venture to produce **pencils.** Experienced U.S. participant is offered equity, as well as technical management contract for initial operations. Equipment, raw materials such as pencil slats, graphite, glue will be obtained from U.S. Initially, about 35% of annual pencil production will be marketed in Liberia with balance exported to Sierra Leone, Ivory Coast, Ghana. Firm is conducting market survey and cash flow projection for project. George W. W. Dennis, Mng. Consultant, Wehden Assoc., P.O. Box 2244, 44 Broad St., Monrovia. WTDR. OPIC. Further details available from

Important Notice

Most member countries of the League of Arab States employ a secondary boycott against foreign firms which undertake certain specific types of business relationships with the State of Israel. The Commerce Department will not disseminate nor make available for inspection any tenders or trade opportunity documents which contain conditions intended to support such boycotts, or which are based on documents known to contain such provisions. Trade or investment opportunities published herein are not presently known to be subject to such conditions. However, it is possible that U.S. firms responding to opportunities from Arab countries may be asked at some stage of a transaction to participate in an Arab boycott-related restrictive trade practice as defined in the Department's Export Administration Regulations (15 CFR, Part 369 et. seq.).

Firms are reminded that it is the policy of the United States (a) to oppose restrictive trade practices or boycotts fostered or imposed by foreign countries against other countries friendly to the United States, and (b) to encourage and request U.S. concerns engaged in the export of articles, materials, supplies, or information to refuse to take any action, including the furnishing of information or the signing of agreements, which has the effect of furthering or supporting such restrictive trade practices or boycotts. Accordingly, U.S. concerns receiving such requests to participate in a restrictive trade practice or boycott are encouraged and requested to refuse to comply with them.

Firms are further reminded that U.S. concerns receiving requests to participate in a restrictive trade practice or boycott must report such request to the Department of Commerce in accordance with Section 369.4 of the above-cited regulations.

Overseas Products & Investment Opportunities Staff, Room 4021, U.S. Department of Commerce, Washington, D.C. 20230. P-77266.

Licensing In U.S.

For additional information on these opportunities to manufacture foreign firms' products in the United States under a licensing agreement or in partnership, write the Domestic Investment Services Staff, Bureau of International Commerce, Room 4020, U.S. Department of Commerce, Washington, D.C. 20230 (202-377-5361, referring to the appropriate file number.

Investment

GERMANY—Cigarette packaging plant. Company wishes to locate suitable site in U.S. No figures yet available on size, investment, or number of employees needed. Dr. Brink, Maschinenfabrik Fr. Neipmann GmbH, Bahnhofstr. 21, 5820 Gevelsberg. File 3326.

Joint venture

BELGIUM — Castings. Company with foundries engaged in all types of casting including high pressure, permanent mold, hot press forging, and sand casting will invest up to $10 million in joint venture in U.S. Doris Atkind, European-American Bank & Trust Co., 10 Hanover Sq., New York, N.Y. 10005. File 3329.

BELGIUM—Knitting machines, industrial. Seeks association with U.S. firm for sub-assembling, assembling, servicing, and spare-parts distribution in U.S. Frank Denis, Mng. Dir., FN Knitting Machines, Ten Briele 2, B-8200 Brugge. File 3330.

GERMANY—Controls, valves. Company wishes to have partnership in small U.S. firm manufacturing and/or developing automatic control systems, hydraulic and pneumatic valves, pressure and temperature switches, as well as solenoid valves, filters, driers. Preferred location: Pennsylvania, Illinois, Michigan. Financial participation, about $2 million. E. Herion, Mgr., Herion Werke KG, Stuttgarterstr. 120, D-7012 Fellbach. File 3327.

GERMANY — Segmental saw blades. Seeks U.S. partners for production in U.S. Blades possess specially annealed saw-body with turned traverse on both sides; high segments of super speed steel; maximum resistance to stress; cutting angle suitable for all materials. Frau Eyer, Ludwig Koehler, Im Hamperbach 2, 5800 Hagen-Ambrock. File 3328.

Licensing

AUSTRIA—Plasmatron that can maintain and regulate a thermonuclear reaction. Jeroslav Kudrna, Pulvertugmgasse 18/21, A-1090, Vienna. File 3331.

AUSTRIA—Windmill with vertical turning axis. Low-cost construction and installation, large power output because of blade design. Ing. Gottfried Oppolzer, Geylinggasse 15/7, A-1130, Vienna. File 3332.

FRANCE—Machine tools, forming, bending punching and shearing machines and presses. Mr. Cazaban. Societe Colly, 66-72 rue Emile Decors, 69607 Villeurbanne. File 3350.

FRANCE—Volumetric pumps, supressors used for movement of anhydrous ammonia fertilizer. O. Dupont, Orgplex S.A., B.P. 5, 10 rue de la Commune de Paris, 59950 Auby. File 3334.

FRANCE—Paper binding machine. Patrice Clementz, E.A. Clementz et Cie, 58 rue du Marche-Gare, 67200 Strasbourg. File 3335.

GERMANY—Compactors for construction. Friedrich Bilger, Mozartstr. 12, D-7900, Ulm/Donau. File 3336.

GERMANY—Construction know-how for permanent formwork for reinforced concrete joint floors. Friedrich Bilger, Mozartstr. 12, D-7900, Ulm/Donau. File 3337.

GERMANY — Agricultural machinery, particularly fertilizer distributors and pneumatic sowers. Doris Atkind, European American Bank & Trust Co., 10 Hanover Sq., New York, N.Y. 10015. File 3338.

GERMANY — Railway diesel engines, small, used in rail, mining, construction industries. Fritz Rensmann, Fritz Rensmann Maschinenfabrik, Bruennerhelfstr. 33, 4600 Dortmund 1. File 3339.

GERMANY—Tire chains, with special links for long wear and anti-skid. A. Niesen, Heinz Asbeck-Industrieanlagen, Markusstr. 42, 4600 Dortmund 30. File 3340.

GERMANY—Mixer and applying equipment for concrete and plaster. Deliver from 4 to 7 cu. m. of ready-mixed mortar per hr. Uelzen Maschinenfabrik, Friedrich Maruer GmbH, Wiesenstr., 6231 Sulzbach. File 3341.

GERMANY—Chess game for three persons. Game board with triangular "squares" incorporates new piece with corresponding pawns. Norris Schach, H. Koller GmbH, Schnieglingerstr. 196, 8500 Nuernberg. File 3342.

GERMANY—Waste gas cleaning system reportedly offers extremely economical method for cleaning toxic and similarly harmful gases such as fluorine, chlorine, and sulfur; is particularly suitable for de-sulfurization of power plant gases. Hugo Schmitz, STG Stroemungstechnische GmbH, Siemensstr. 26, 4720 Beckum. File 3343.

GERMANY — Prefabricated aluminum building system. Used in Germany in building schools, libraries, stores. E. B. Rensch, Studio Eberhard G. Rensch, Lerchesbergring 24, 6000 Frankfurt/Main 70. File 3344.

GERMANY—Circular saw blades made from speciality steel and used for cutting rolling mill products such as steel beams, bars, tubes. Ingo Kampmann, Dortmunder Industriesaegen GmbH, Juchostr. 30, 4600 Dortmund. File 3345.

SWEDEN—Electronic timer for developing and exposure of film. AB Gitson-System, Box 43073, S-10072 Stockholm 43. File 3346.

SWITZERLAND — Drilling hammers, electro-pneumatic rotary, mainly for use in building industry. R. Wasser, Marto AG, Bielstr. 67, 2555 Bruegg. File 3347.

SWITZERLAND—Military tank fire simulator. For military training use. Gebr Schaerz Elektronik AG, 3800 Interlaken. File 3348.

SWITZERLAND — Riveting machines. Taumel (wobble) consists of six different machines. Paul Kocher, Paul Kocher AG, P.O. Box T44, 2500 Biel. File 3349.

Philippines Seeks Foreign Investors In 18 Fields

The Philippine Board of Investments has listed 18 industrial fields in which foreign investment and/or technology are welcome. The Philippines divides the category of new investment into pioneer areas, eligible for up to 100 percent foreign ownership, and non-pioneer areas, eligible for up to 40 percent foreign equity.

Industries in the pioneer category are: Antibiotics—penicillin, streptomycin and tetracycline; blowing agents for rubber and plastic compounds; petroleum wax; and air compressors. The non-pioneer industries are: Essential oils; refined glycerine; pleasure boats; furniture; lumber products; dehydrated onion and garlic; tuna fishing and canning; seaweed processing; compressed fodder; footwear and women's clothing. Industries which overlap the pioneer/non-pioneer categories are: Disposable hypodermic needles and syringes, high tension porcelain insulators, and shipbuilding.

For further information write: Philippine Board of Investments, Ortigas Bldg., Ortigas Ave., Pasig, Metro Manila. Projects in the Philippines may qualify for OPIC insurance. P-77285.

Opportunities For U.S. Firms In W. Berlin Industrial Park

The West Berlin Corporation, GEHAG, which owns extensive real estate and buildings in the city, is planning to set up an industrial park in West Berlin. The park will comprise industrial and commercial buildings and housing complexes. The concept is to integrate living and working areas by combining attractive housing with proximity to factories and offices. GEHAG will furnish land for the project, which could be as large as 100,000 sq. yd. for industrial use alone. GEHAG will act as general contractor for the project.

American firms are invited to participate in the project on a joint venture basis or as suppliers of equipment needed, which covers a wide spectrum. Both GEHAG and West Berlin Government offer favorable investment conditions. For further information contact G. Twyrdy, GEHAG, Mecklenburgische Strasse 57, D-1000 Berlin 33 (Wilmersdorf). Telephone: 030-82-30-21. WTDR. P-77257.

Nigerian Firm Seeks Contacts

A Nigerian firm seeks direct imports or representation agreements from American manufacturers of medical, surgical, and hospital equipment and supplies. MESCIPHARM (stands for medical, scientific, and pharmaceutical) is also interested in importing scientific and laboratory apparatus, furniture and supplies. Also seeks to make arrangements to send U.S. technicians to Nigeria to train lab technicians there in equipment maintenance. American companies interested in contacting the Nigerian firm may write directly to MESCIPHARM's representative in U.S., Martin Anochie, 3221 Toledo Pl., Hyattsville, Md. 20782. Expressions of interest may also be mailed to Shelley Berlin, Foreign Buyer Program, Room 2322, U.S. Department of Commerce, Washington, D.C. 20230.

The following trade opportunities are based on reports received from the U.S. Foreign Service—Department of State by the Trade Opportunities Program, Room 2323, U.S. Department of Commerce, Washington, D.C. 20230. The commodities in which foreign firms have interest indicated by codes 0111-1799 and 4011-8999 are based on the Standard Industrial Classification Manual, 1972; codes 20 through 39 come from Numerical List of Manufactured Products (New 1972 SIC Basis), MC72-1,2. Codes beginning with 99 are from the TOP coding system.

U.S. firms should be aware that the listing in Commerce America *of opportunities to trade in specific commodities and technical data does not necessarily imply approval of their export by the Department of Commerce pursuant to the Department's Export Administration Regulations. Applicable export licensing regulations must be followed.*

Every effort is made to include only traders with good reputations. However, the Department cannot be responsible for any trade relations.

WTDR indicates that a World Traders Data Report on this specific firm is available at $15 from the Export Information Division, Room 1033, U.S. Department of Commerce, Washington, D.C. 20230. A WTDR is a trade profile which contains commercial information including financial references, on an individual foreign firm. Orders must include complete name and address of the subject firm and be accompanied by payment. Further information concerning WTDRs and request forms are available at each Commerce District Office.

The mark (•) indicates that this trade opportunity is a request for bids by a foreign government agency.

Direct Sales

Miscellaneous marine products

0919—JAPAN—Fresh sea urchins; esti. annual purchase $40,000. Buyer is manufacturer of metal name plates. Wishes to diversify line of business to importation and distribution of marine products. Fresh sea urchins must be sent by air. Capital US $30,000. 1976 sales U.S. $350,000. Ref. Kyoto Bank Saiin Branch, Kyoto. Reply to—Noboru Okayama, Pres., Nisshin Name Plate Co., Ltd., 14-1 Higashi-Iru, Nishioji-Gojyo, Shimogyo-Ku, Kyoto 600. Tel 075-313-4792.

Clay

1452—SWITZERLAND — Seeks reliable supplier of bentonite. Annual sale amounts to several thousand metric tons. Already buying from U.S. source. Requests chemical and physical analysis, mesh ratings, and samples of one kilogram for own tests. Also needs indication of monthly capacity of interested suppliers. Well established, prosperous trading company specializing in bentonite. Customers in all continental Europe. Bankers report sound financial standing, adequate working funds. Business highly recommended. Reply to—Ms. C. G. Gaissert, C. G. Maier-Gaissert, Mittelstrasse 12, CH-8008 Zurich. Tel: 01/32 53 66.

Partitions, shelving, lockers, office, store fixtures

2542251—FRANCE — Fire-resisting lockers to be used in EDP industry. Dir. sale & agency. Estab. 1951. Employs 16 plus 10 salesmen. Mfrs. filing equip. for EDP industry & imports calculators & cash registers. According to firm's statement, annual turnover 4,5 million francs. Bank ref: Banque Hervet, Paris and B.N.P., Courbevoie. Reply to—Mr. Brailly, S.A. Gallus, 10 Bis Rue Georges Lardennois, 75019 Paris. Telex 680461F; phone 208 84 94.

Drugs

• **2831000, 2834000—SRI LANKA**—State Pharmaceutical Corporation requests bids on pharmaceutical preparations including antibiotics, sulfas, vitamins, steroids, tranquilizers, cardiovascular drugs, etc. Also includes 1,000 vials rabies antiserum. Closing date May 11. For copy of tender documents, contact L. R. McIntyre, U.S. Department of Commerce, Room 2106, Washington, D.C. 20230; 202-377-2239.

• **2834000—SRI LANKA** — Ministry of Health requires primaquim phosphate U.S.P. and amodioquine hydrochloride N F tablets; also injectable chloroquin sulfate. Closing date for bids May 10. For copy of tender documents, contact L. R. McIntyre, U.S. Department of Commerce, Room 2106, Washington, D.C. 20230; 202-377-2239.

Chemical products

2893000 — EGYPT — Heat set offset printing litho inks non-scratch, 75 metric tons for web offset machines (wet and dry), with following specifications: yellow, 20,000 kgs, 25 tins; light blue, 12,000 kgs, 25 tins; red, 10,000 kgs, 25 tins; black, 9,000 kgs, 25 tins; varnish, 5,000 kgs, 25 tins; ochr, 5,000 kgs, 25 tins; greg green, 9,000 kgs, 25 tins; transparent, 5,000 kgs, 25 tins; tubes, 200 kgs, plastic tubes. Interested U.S. firms urged to contact Egyptian agents for complete specifications and conditions of tender. Price quotations requested f.o.b. and c. and f. Samples of 5 kgs of each color required with offer. Payment facilities requested over 180 days. Letter of guarantee of 2 percent requested with offer valid for three-month period. Reply or cable to Foreign Purchase Department, Mng. Dir.,. Societe Indistrielle Moharrem Press, Canal Mahmoudieh St., Nouzah, P.O. Bag Alexandria. Cable: MOHAPRESS ALEXANDRIA; Tel: 76685; Telex: PALOT 4027 UN.

Steel mill products

• **3310000—BOLIVIA** — 16,500 meters seamless steel pipe, various sizes and diameters. Tender No. 3/77; bid deadline May 9. Regional Development Corp., Comite Departamental de obras Publicas, Casilla 218, Santa Cruz. Tender documents available from above address at $25. U.S. firms must have Bolivian representative.

Fabricated structural metal products

•**3443000, 3531000, 3537000, 3541000—BURMA**—Textile Industries Corp., 53 Pyidaungsu Keiktha Rd., Rangoon, invites firms to bid for supply of mechanical repair shop equipment including 3 swing center lathes, one tool room lathe, one universal milling machine, one cutter & tool grinder, one shaping machine, one power back sawing machine, 4 grinding machines, 19 drilling machines, 3 portable electric thread tapping machines, one universal woodworking machine, one band saw, one woodworking lathe, 4 sets oxy-acetylene welding and cutting equipment, one cold spray welding equipment, 2 AC arc welding sets, one portable diesel welding set, one blacksmith hearth, one power hammer, and various types, sizes and quantities of tools, accessories and supplies; 2 steam boilers each having rating of 3,000 lbs. per hr. at 150 psig, and auxiliaries; 2 storage tanks for jute batching oil; 2 diesel forklift trucks with capacity for 5,000 lbs. to 18 ft.; one 7-ton & one 22-ton diesel powered truck cranes. Financed with Asian Development Bank credit. U.S. Embassy, 581 Merchant St., Rangoon, will forward copies of bid invitation and specifications to interested U.S. firms on request, citing "T-0038," enclosing check for $32 per set, payable to U.S. Embassy, Rangoon. Bid deadline June 22.

Farm machinery

• **3520000—GHANA** — Government purchase of unspecified number (minimum 500 units) of two and four-wheeled tractors. Two wheeled tractors, all terrain type, 5 to 8 HP diesel, attachments for plowing, cultivating, tilling, ridging, clearing and carting; approximate weight 460 K.G. Small convertible tractors, 2 or 4-wheel drive, 2-cylinder diesel, 17 HP maximum with front and rear power take-off (PTO) and attachments for wide range operations on small-scale agricultural projects on all types of terrain; approximate weight 650 K.G. and minimum clearance 330 MM. Quote in multiples of 500 units of each type with appropriate attachments, recommend spare parts and accessories, indicate freight charges, quantity discounts, conditions of sale and payment terms. Also indicate prospects of establishing spare parts and repair facilities in Ghana. No bid deadline indicated. Quotations should be sent to Brigadier J. P. K. Mensah-Brown, Chief Executive Ghana National Procurement Agency (GNPA), Ministries Post Office, Accra. Specifications available at U.S. Department of Commerce, Washington, D.C. 20230, 202-377-2923.

Construction, mining, materials handling machinery, equipment

• **3531000—PHILIPPINES** — Supply and delivery to site, servicing and making operational of various construction equip-

ment for second Davao Del Norte Irrigation Project, such as tractors, loaders, backhoes, rollers, cranes, graders, dump trucks, fuel tank trucks, water trucks, concrete mixers, pumps, concrete vibrators, screening plant, weight batcher, generators, and chain saws. Manufacturers or their duly authorized representative shall be permitted to bid on individual items. Philippine government has received loan from ordinary capital resources of Asian Development Bank in various currencies towards cost of project. Manufacturers or representatives may obtain contract documents upon non-refundable payment of U.S. $50 per copy from Cesar L. Tech, Asst. Administrator, National Irrigation Administration, Office of Special Projects, 6th Fl., NIA Bldg. A, Epifanio de Los Santos Ave., Diliman, Quezon City, Metro Manila, prior to submitting offers. Bidders will be required to submit with proposals qualification data which will indicate capacity to provide service support and spare parts inventories in Philippines. Bid deadline June 1.

Special industrial machinery

3555343 — ITALY — Photo/composition machines. Terms of payment & delivery to be agreed between parties concerned. Small dealer & consultant in field of printing & converting machinery. Estab. 1972; has 6 employees & 5 reps. Most of products sold are made for C.B.M. by other mfrs. Yearly sales reported to be about $2 million. Owned & controlled by COMAC, company of well-known Batogi financial group. Information from one local banking source is favorable & C.B.M. considered good contact for U.S. firms using normal trade precautions. Reply to—Franco Bubani, Mgr., C.B.M. S.P.A., Via Duca Degli Abruzzi 5, 20059 Vimercate, Milano. Tel. 039-668041; telex 36608 for CBM. Dir. sale & agency or distr.

• **3554049—TUNISIA**—Supply of machinery to make cardboard/paper eggtrays and small fruit boxes. No fixed deadline. Boxes and trays to be produced using paper waste or humid fibers from pulp and paper plant. Capacity 600 trays/hr. Make offers on pro forma invoices with 10 copies and sketch of machine and instructions for use. Pro formas should include following info: net price; net from tax; delivery (preferably f.o.b.); delivery date; payment terms (preferably sight draft at 90 days); country of origin of machinery; total cost; company seal and signature. F.o.b. price required even if delivery on different terms. Write Monsieur le President Directeur General, Societe Tunisienne de Papier Alfa Sotupalfa, 6 Avenue Habib Bourguiba, Tunis.

3558398—SWEDEN — Plastics compression or lamination machinery & equip. for laminating pictures or decorative printed papers between several layers of plastic. Uses equip. of own construction which can press 5 sheets at same time. Printed material is placed between 2 plastic sheets; sheets are then inserted into one of the 5 layers & heated & cooled under pressure. Firm does not have much competition in Sweden & sales volume steadily increasing. Therefore looking for more efficient advanced compression equip. in order to increase capacity. Although small, financially sound & has met payments satisfactorily. Ahlin & assistant planning to visit U.S. suppliers of suitable equip. Reply to—Dag Ahlin, Plast-in AB, Haradsvagen 75, S-141 41 Huddingen. Tel 08/774 38 00 or 774 25 27.

3559300—ZAMBIA—Supply of plastics machinery for manufacture of plastic sheeting, bottles, bottle caps, ballpen covers, suitcases, etc. No fixed deadline. Interested suppliers write: A. D. J. Parmar, Dir., Parmar S. Parlour, 803 Freedom Way, P.O. Box 854, Lusaka.

General industrial machinery

• **3560000—SINGAPORE** — Rotary gear pump, rotary vane pump, piston pump, self priming centrifugal pump, all complete with motor. All above pumps for pumping low or medium viscosity liquids. SOM/TENDER/6173/GBC; Tender No. E.307/77. Bid deadline May 10. Gan Kim Tong, Administrative Assistant (Supplies), Singapore Polytechnic, Prince Edward Rd., Singapore 2. Interested U.S. suppliers write Gan Kim Tong at above address.

• **3560000—YUGOSLAVIA** — One complete piston pump with unit consisting of vertical five-cylinder piston pump with 7 inches clutch stroke, skid gear, reducer and power unit (separately described). To be used for pumping water 24 hours/day for 20 years. Will be drawing salt water from crude oil; specific gravity of salt water 1.03; pumping temperatures from plus 5 degrees C to plus 35 degrees C; working pressure 220 bar (3120 PSIG); suction pressure 0.35 bar (5 PSIG); maximum capacity 2000 cubic meters/day. One gas engine to drive pump, type Waukesha, using natural gas; piston model L7042 G/LC; 12 cylinders; bore and stroke of cylinders 9-⅜ x 8-½ inches; cylinder displacement: 7040 cubic inches. Type combustion: naturally aspirated; operating speed: 500-850-1000 RPMS; BHP including transmission losses: 387-638-760 HP. Tender No. 519; bid deadline May 25. Ina-Naftaplin, Oour Komercijala, Proleterskih Brigada 78, 41000 Zagreb. Bids in six copies should be forwarded to above address with notation "Ina-Naftaplin Specification No. 2546-In." Bids should consist of technical data, references and prices. Bidders who offer credit and accept 30 percent counter-trade in technical goods from Yugoslavia will have advantage.

Service industry machinery

• **3589200—EGYPT** — Supply of equipment for expansion of water treatment plant at Helwan Company for Spinning and Weaving. Bid deadline May 31. Tender documents may be purchased from Helwan Company for Spinning and Weaving, 9, 26th of July St., Cairo. Cost LE 10 (U.S.$25) per copy. Offers to be presented in sealed envelopes addressed to Chief Engineer, Director of Foreign Purchasing Committee, Misr, Helwan Company for Spinning and Weaving, Kafr Al-ULw, Helwan, Cairo; Ref: Tender No. 17.

• **3589200—INDONESIA** — Supply and delivery of water treatment equipment for 3 cement plants. Bid deadline not fixed, tenderers to be notified. Cement facilities include Baturaja clinker plant, Palembang cement grinding plant, and Panjang cement grinding plant. Tender specs. available for 30,000 rupiah (approx. U.S.$72.29) from Azwar Anas, President Dir., P. T. Semen Baturaja, Granadha Bldg., Jalan Dendral Sudirman 50, Jakarta Selatan. Tel: 583557 or 584347. Financing by Asian Development Bank loan.

Electrical industrial apparatus

3629398—GERMANY — Cable insulating devices; component mounting apparatus. Dir. sale for resale and/or agency. Payment 60 days net; delivery f.o.b. Nuernberg airport. Estab. 1970, mfrs., wholesales, exports & imports production equip. for electronics industry. Employs 15 & said to have satisfactory sales. Finances reportedly in good order & obligations met without delay. Considered suitable business partner. Reply to — Herrn Farrenkopf, AAT — Aston Gmbh, Rothenbugerstrasse 33, 8500 Nuernberg. Tel 0911/260133.

Communications equipment

• **3661000—COLOMBIA** — Division De Suministros, Empresa Nacional De Telecommunications De Colombia, Calle 23, No. 13-49, Piso 7, Bogota, has issued tender number 035-77 for supply, mounting, installation, and placing in operation of international and national long lines switchboard system for Bogota. Bid deadline June 14. Approximate cost $9 million. Copy of specifications available from above address for 40.000 pesos (US $1,100) first copy and 4,000 pesos (US $110) each additional.

3662681—SWEDEN — Automatic garage door openers. Est. value $20,000 or more. This building contractor builds small private homes, in which above will be installed. Also interested in agencies or distributorships for these door openers. Local credit sources report firm has met payments promptly. Since rather small & recently established (1974), normal business precautions recommended. Reply to—Thomas Hmiopek, Ekero Smahus AB, Ekvagen 24, S-170 10 Ekero. Tel 0756/322 79.

Electrical machinery, equipment, supplies

• **3693000—LEBANON** — Omar Tabbara, Director of Posts, Ministry of PTT, Beirut, has issued tender for supply of X-ray machines to examine letters and packages. No bid deadline. Copy of specifications available from above address.

Instruments for measurement, analysis and control

• **3824000—GREECE**—Hellenic Telecommunications Organization, Call For Bids Division, 6 Klissovis St., Athens, has issued tender number 7201 for supply of miscellaneous electronic measuring instruments. Bid deadline May 10. Copy of specifications available free from above address.

• **3824000, 3589000—THAILAND** — Metropolitan Water Works Authority, Siyak Mansri, Bamrungmuang, Bangkok, has issued tender number PAW-3 for supply of one venturimeter water metering system and one integrated and coordinated chlorination system. Bid deadline May 17. Copy of specifications available from above address at US $125 per set.

• **3829000—MALAYSIA**—Director General, Drainage and Irrigation Department, Swettenham Rd., Kuala Lumpur 10-20, has issued tender for supply of one universal testing machine, 100/200 ton capacity. Copy of prequalification forms available from above address.

Surgical, med., dental instruments

• **3841000, 3842000 — YUGOSLAVIA**—General medical and surgical hospital in-

struments and supplies except furniture for new Polyclinic in Sibenik, including following sections: emergency; internal; diabetic; endocrinology; endoscopy; sterilization; washing area; preparation area; surgical theatre; plaster cast room; examination and treatment room; urology; orthopedics; orthopedic cast room; skin-venereal disease; dispensary for women; ultrasonic sound room; central laboratory; hematology-cytology center; x-ray room; pharmacy; occupational disease dispensary; radioisotope laboratory; central distribution of medical gases. Complete list of desired equipment and instruments being translated into English and will be available from Commerce, TOP, Rm 2321, Wash., D.C. 20230; 202-377-2251. Written bids should contain pro forma invoices in five copies including most favorable prices, delivery deadlines, brochures, guaranty, servicing and best payment conditions, both cash and credit. Bids may be for all or part of requested equipment. Bids should be submitted to Ivan Srdarev, Hospitaldent-Laboratoria, Berislaviceva 11, 41000 Zagreb. Bid deadline June 11.

3842351—BELGIUM—Working gloves in pvc, plastic, leather, rubber. 40 million bf annual turnover, selling tools to department stores, do-it-yourself shops & hardware stores. Also has line of working gloves & represents German & Dutch firms. Wishes complementary U.S. lines & is interested in either direct sales or representation. Sells in Belgium through own salesmen. Reply to—B. Kluft, Mgr., Kluft Abrasives P.V.B.A., 114-118 Liersesteenweg 2510 Mortsel. Telex 35311; Phone: 031/40 01 07.

Manufacturing industries

● **3999000—TUNISIA** — Regie Nationale Des Tabacs et Des Allumettes, Route De Zaghouan, Tunis, Telex 12, 063, has issued tender for supply of 300 million cigarette filters in 90mm lengths out of white cellulose acetate, 450 million cigarette filters in 60 mm lengths out of pure white cellulose. Bid deadline May 10. Tender documents available from above address.

Antique, secondhand stores

5931—BELGIUM — Antique furniture, paintings, porcelain. Reply to Hedwig Van De Steen, Mgr., Galerij H. Van De Steen, P.V.B.A., Leo De Bethunelaan 10, 9300 Aalst. Phone 053/700889.

Representations

Foreign private firms are interested in agency agreements and/or distributorships for these products.

Bituminous coal, lignite mining

1211—SPAIN—Cokeable coal. Firm operates on national basis & imports from various undisclosed sources. Indicates that if quality of coal, price & delivery period interesting, could obtain contracts for at least 1 million tons/year. Indicates it has important connections with major steel mfg. plants in country. Corresp. in Spanish. Quotations should be f.o.b. U.S. Gulf port or U.S. Atlantic Port. Call or cable—J. Llorente, Dir., Cantonal-Financieros, Apartado No. 18.023, Madrid. Telex: 42710—FONOTX-E (codex 42-00118).

Wood, metal products

2499583, 3469913—CANADA — Kitchen woodenware dishes, serving forks, spoons, salad mixing bowls, etc. Also, porcelain enameled & stamped & pressed metal. Excl. distr. Imports & distributes kitchen products, giftware, & food products. Maintains staff of 16 plus 9 salesmen serving Vancouver, B.C. to Toronto. Carries complementary line of varied giftware & listed with major supermarkets for line of spices. Annual sales vol. $2 million, est. sales vol. for requested products $100,000. Banking source states firm fully responsible for business commitments. Reply to—Dave Teja, G. S. Teja Ltd., 422 Railway St., Vancouver, B.C. Tel 604-254-0441.

Chemical products

2899598—PORTUGAL — Stabilizers for PVC & secondary plasticizers such as following complexes: strontium & zinc; laurates, myristates, laurate stearate & mercaptides of barium & cadmium or barium, cadmium & zinc. Firm estimates that sales potential for products requested is about 25,000,000 escudos/year. Large commercial enterprise distributing industrial & construction machinery & raw materials, incl. chemicals. Has chemical products dept. & operates through 26 salesmen, one branch house & various agents located throughout Portugal. Yearly sales volume about 200,000,000 escudos. Banking & trade references report favorably. Excl. agency & distr. Reply to—Ferreira Da Silva, Dir., Rolim Comercial, SARL, Largo Vitorino Damasio, 3, Lisbon 2. Cable ACLIM; telex 1287 ACLIM-P; tel. 668173.

Miscellaneous fabricated products

3079000, 3429711, 3693082, 3811185, 3949577, 3949581, 3999909, 3999913—SWEDEN—Financially sound firm with good reputation would like to expand activities, seeks to act as agent for variety of fabricated products: consumer & commercial plastic tubing, plastic products; construction plastic products; plastic dinnerware & tableware; plastic kitchenware; plastic hardware, incl. builders', furniture, marine, etc.; marine hardware; diathermy equipment; nautical instruments such as log-lines with dippler effect, wind indicators; direction finding systems, for private sailing boats & cruisers; tennis, badminton & related equipment; underwater sports equipment, skin-diving apparatus, incl. aqua lungs & attachments, face masks, etc.; beauty & barber shop furniture, equipment & accessories. Recommend trade contact, provided normal trade precautions observed. Reply to Jan Esberg. Ab Gitson-System, Karrgrand 6, S-162 46 Vallingby. Telex 11609; Tel 08/19 45 13 or 45 35 55.

3079813—PERU — Cellophane paper, uncoated & nitrocellulosic coated. Also polymer coated. Small, well-estab. firm engaged in agency business. Sells industrial chemicals, steel wool & other industrial materials from small office located in central business district of Lima. Reply to—Roger Mendez, Mgr., Latinoamericana de Inversiones S.C.R.L., P.O. Box 3730, Pasaje Santiago Acuna 127, Of. 210, Lima 1. Cable SAGLOBE; telex PX-5606; tel 278637.

Steel mill products

3312180 — SINGAPORE — Ferroalloys. Member of Mallinson Denny Mott (U.K. group of companies). Estab. 1955 as purchasing agent for principal & associate companies. Began active trading 4 years ago. Presently expanding operations through diversification. Banks with Hong Kong & Shanghai Banking Corp., Ocean Bldg., Collyer Quay, Singapore 1. Reply to—C. C. Pepper, Mgr., Louis T. Leonowens (S.E.A.) Ltd., P.O. Box 1961, 32 Kallang Pudding Rd, Singapore 13. Cable LEONMALA, SINGAPORE; telex RS 21959 (LENSIN).

Cutlery, hand tools, general hdwr.

3423141, 3421157—FRANCE—Screwdrivers & shears. Reply to—Mrs. M. Clement, Mgr., De Cleso S.A.R.L., 9 Bis, Rue Daguerre, 95240 Cormeilles en Parisis. Tel 978 25 95.

Construction machinery

3533261—BOLIVIA—Parts for oil & gas drilling equip. Different types. Reply to—Herbol S.A., H. E. Rector, Casilla 8279, La Paz.

Special industrial machinery

3559555—GUATEMALA — Machinery to make mirrors from purchased glass. Sapper is glass importer, also owner of local BMW automobile importer/dealership. Recommended as trading partner. Reply to—Arne Sapper, Bavaria Motors, 6A. Avenida 4-54, Zona 4, Guatemala City. Tel 310816.

3559589—FRANCE—All types of machinery for production of sun-glasses. Subject firm is small company employing 35 & specializing in manufacturing sports glasses & goggles. Annual sales: 5 million francs. Already imports some components from U.S. Reply to—M. Wolff, Mgr., Groupement Inter Lunetterie, 10 Rue Docteur Levrat, 01130 Nantua. Phone: 432 Nantua; telex: 380502.

Electric lighting, wiring equipment

3648931—PERU—Marine markers & beacons. Small, well-established agency business owned & managed by 2 young Peruvians, known to be aggressive & up-to-date businessmen. Interested in representing U.S. firms for above. Contact—Martin Sardon, Mgr., Gasar S. R. Ltda., Av. Benavides 438-A, Lima 18, Peru. Cable GASAR-LIMA.

Communications equipment

3662681—GERMANY—Automatic garage door openers. Expected annual import volume $400,000. Buyer, newly established company, wishes represent U.S. firms for items wanted. Does not employ outside help. No special requirements as to price quotation. Terms of payment: upon agreement. Favorably known to Consulate General. Reply to—Ulrich Schnelle, Hegaustrasse 2, D-7000 Stuttgart 30. Phone 0711/815225. Sales repr., possibly on commission basis, for Germany. Also purchase for resale to end-users & dealers.

Engineering, laboratory, scientific, research instruments

3811120—AUSTRALIA—Nautical instruments. Well estab. & reputable importer/

distr. of marine hardware & accessories. Employs 59. Working capital 1,085,500; annual sales vol. $3.9 million. Imports from U.S., U.K., Japan, Canada, France, Germany, Ireland. Trade ref: Davis Instruments Corp., 857 Thornton St., San Leandro, Calif. 94577. Also exports to New Zealand & Pacific Islands. Reply to—Chisholm Cutts, Mng. Dir., Inglis Smith & Co., Pty. Ltd., 186 York St., South Melbourne, Vic 3205. Cable INGLISMITH; tel 03-699-5022.

Musical instruments, parts

3931413—SWEDEN—Clarinets for beginners in school. Intends to buy 500 instruments each year. Sells educational books and equipment, is subsidiary of Esselte AB (WTDR 04/75), share capital skr 130 million, quoted on Stockholm Stock Exchange. Has ample financial resources at its disposal. Recommended trade contact. Reply to—Bengt Lindahl, Aw Laromedel AB, Box 159, S-101 22 Stockholm. Cable: AWEDUC; tel: 08/22 91 80.

Future Construction Abroad

ALGERIA—State Hydrocarbon, Fertilizer, and Plastic Monopoly, SONATRACH, is inviting companies to submit offers for turnkey construction of **factory to produce polyvinyl chloride sections for plastics plant.** Tender documents cost approximately $120 and are available from: The Division Engineering and Development, Project Plastiques, SONATRACH, 10 Rue du Sahara, Hydra, Algiers; telex: 52-918 and 52-375. Deadline for submitting offers May 18. All correspondence must be in French; please send copies to Ms. Cherie Loustaunau, CAGNE/BIC, U.S. Department of Commerce, Washington, D.C. 20230; 202-377-4441.

MALAWI—Ministry of External Affairs invites expressions of interest in tendering for construction of **improvements to Chipoka Harbor** in central Malawi. Proposed works consist of following major items: approx. 1500 sq. meters steel sheet to rehabilitate existing jetty together with 2500 sq. meter concrete apron slab; 800 sq. meter transit shed; roll on/roll off link span of welded R.H.S. construction; miscellaneous building works including passenger shelter, office block, staff housing, mechanical workshop, etc.; railway track work; construction of minor roads and works and installation of services. Anticipated that tender documents will be issued in May with tender period 60 days. Tender documents will be issued only to firms that can satisfy prequalification requirements of Malawi Government and IDA as being capable of carrying out works with value in excess of U.S.$1.1 million. Documents will be issued to prequalified tenderers by Howard Humphreys & Sons (Malawi), P.O. Box 494, Lilongwe, on receipt of deposit equivalent to U.S.$110 (refundable on receipt of bona fide tender.) Firms wishing to be included in list of selected tenderers submit names and particulars to Howard Humphreys & Sons (Malawi) by April 29. Refer to Tender Notice No. 1640. Prequalification will be determined on basis of applicant's ability to perform satisfactorily, taking into account experience, capability of personnel, equipment and plant and financial position.

IRAN—Blount Brothers International is seeking bidders for **interior finishing and landscaping for $20 million expansion of Arya Sheraton Hotel in Tehran.** Tender docs for contract #0600 available either at Blount's Tehran office (attn: Terry Honan, contract administrator, P.O. Box 33/110, Tehran, telex: 212038 CHTR IR) or through Blount Brothers office in Montgomery, Alabama (attn: Michael Palmetier). Closing date for submission of proposals May 15. Additional information available from either address above or Andras F. Behr, BIC/CAGNE, U.S. Department of Commerce, Washington, D.C. 20230, 202-377-4441. OPIC.

SAUDI ARABIA—Dutch multinational firm recently won $500 million housing contract, wants catalogs, c.i.f. prices and qualification information from U.S. firms supplying goods and services to construction industry, especially following: **prefab housing, precast concrete plants, construction of concrete foundations, supply and installation of electric generators and transmission lines, lighting fixtures, HEVAC equipment, plumbing and furniture.** Company is currently negotiating additional projects there. Interested firms contact C. S. Dyt, Area Repr., International Projects Dept., OGEM B.V., c/o Abbar and Zainy, P.O. Box 461, Jidda, telex: 40062 MOATS IM SJ, Attn: OGEM c/o Abbar & Zainy, telephone: 58749. Company's home address is OGEM B.V., Mathenesser laan 321, Rotterdam, telex: 23423, phone: 010-770144. Firms may also wish to contact Andras F. Behr, 202-377-4441.

SAUDI ARABIA—Firm seeking **joint venture partners for road construction and prefab, pre-cast houses.** Contact M. Nabeel, Sales Dept., Quaid Establishment, P.O. Box 5763, Riyadh, telex: 20054 TEHARYH SJ, cable: QUAIDCO, phone: 51180. Firms may also wish to contact Andras F. Behr, 202-377-4441.

ALGERIA—Bidders sought for construction of **two factories for production of crushed and powered sulfur** for agricultural use at Oran and Beni Mered (western Algeria), 15,000 metric tons capacity each. Tender documents free but will be given only to U.S. firms. Firms should write or send representative ASAP to address below. State past experience and intention to submit offer, correspondence and offer in French required, all specs metric. Submit bids by June 1 to Mr. Djeddar, Project Pesticides, SONATRACH, 10 Rue de Sahara, Hydra, Algiers. Cable: SONEC DZ ALGER, telex: 52375, phone: 605014 and 606633. Firms may also contact Andras F. Behr, 202-377-4441.

The Overseas Private Investment Corp. (OPIC) offers political risk insurance on assets and bank guaranties to U.S. construction and service firms planning to submit bids on projects in certain developing countries, identified by the "OPIC" notation at the end of some items. For further information on OPIC's contract insurance programs, write Construction Insurance Officer, Overseas Private Investment Corp., Washington, D.C. 20527. Tel: 202-632-7825.

SYRIA—Suppliers sought for **metal animal shelters** to provide 140,000 sq. meters roofed area, SIC number 33120. Project located in Kamishly, north east Syria, file obtainable from address below upon payment of SL 4500 (approx. $125). Contact, by May 16, Arab Company for Development of Animal Wealth, P.O. Box 5305, Damascus.

KUWAIT—Private firm wishes to contact U.S. firms interested in setting up **turnkey textile plant** for manufacture of bed and table linens and towels. Contact Jassim Al-Wazzan, P.O. Box 124, Kuwait, telex: 2276, cable: MOTTAMAD 2KT, telephone: 438028/439456. Firms may also wish to contact Andras F. Behr, 202-377-4441.

KUWAIT—Well-known firm seeking bidders for supply and installation of **curing unit for prefab housing factory using prefab concrete products.** Steam boilers, regulators, piping, etc. to be included. System of curing to be used is lost steam method with pressure of one-half atmosphere at curing chambers and without recovery of condensate. Rise in temperature for curing is 25 degrees centigrade per hour. Furel and water tanks will be supplied by buyer. Offers should also include three steam boilers each with capacity of 5000 KQ/hour at working pressure of 7 bars, feed water treatment plant, chemical dosing equipment, various regulators, controls, meters, recorders, etc. Cable or telex The Industrial and Real Estate Co., P.O. Box 23891, Kuwait, cable: JAHIZ, telex: IREC 2145, telephone: 815034. Additional information available from Andras F. Behr, 202-377-4441.

IRAQ—Major sewage systems for 16 Iraqi cities in various stages of design and implementation. Two systems, for cities of Najaf and Kufa, will be tendered in near future and another three, for cities of Mosul, Sulaimaniya and Raadi, are in final stages of design. Additional eight cities have appointed consultants but designs not yet complete. Contact State Sewerage Administration, Aqaba Bin Nafie Sq., Baghdad. Letters should be supported by evidence of qualifications and financial status of applicant, and copies sent to U.S. Interest Section, Baghdad, c/o Department of State, Washington, D.C. 20520, for followup. Additional information available from Andras F. Behr, 202-377-4441.

LIBYA—Tenders invited for construction at Hai Almanara of approx. **30km of sewage pipes 200 to 1800mm diameter, two pumping stations and other related pipes and junctions.** Will be financed by government through Libyan commercial bank. Tender docs and specs may be obtained from Municipality (see below) upon payment of LD250 ($850). Offers must be accompanied no later than May 9 by initial guarantee of 2 percent of value of bid and certificates showing applicant's bona fides. In addition, applicant must be registered as contractor with Ministry of Housing. Write Municipality of Tobruk, Tobruk, Libya.

ISRAEL—Established Israeli firm planning construction of **dairy plant** on 3600 meters, to cost approx. $3 million. Ex-

pected completion date early 1978, will produce various kinds of hard and soft cheese, processed cheese and yogurt. Will process about 300,000 liters of milk per day. Seeking planning and design for new plant, as well as inspection. May involve hiring of personnel and purchase of U.S. equipment. Will be granted status of recognized enterprise by Israel Investment Center. Y. Horowitz, Mng. Dir., Tenne-Noga Dairies, P.O. Box 3230, Ramat Gan. Firms may also wish to contact Andras F. Behr, 202-377-4441. OPIC.

SAUDI ARABIA—Firm wishes to establish **poultry farm** and is seeking U.S. companies interested in acting as joint venture partner. Initial plans for hatching 5 to 10 thousand chicks a day, plus production eggs. Contact S. Hassan, Mgr., Rashid Al-Abdullah Trading Corp., P.O. Box 1782, Riyadh.

KUWAIT—Kuwait Development Co. interested in exploiting **wide variety of trade opportunities, construction and investment projects,** particularly those that will utilize end-products of Kuwait's existing and planned petrochemical projects, i.e., plastic injection, fiberglass, etc., plus any building material manufacturing opportunity for products not already licensed in Kuwait. Interested U.S. firms contact Abdul Jaleel A. Al-Gharabally, Gen. Mgr., Kuwait Development Co., P.O. Box 2350, SAFAT, Kuwait. Cable: DEVELOPKO, telex: 2683 K.T. DEVELOP, telephone: 444780 and 444790.

IRAN—Esfahan Water & Sewage Board (EWSK) seeking tenders for supply, installation, erection, testing, commissioning and setting to work of **Esfahan water treatment plan stage 1,** with rated output 345,000 cubic meters/day, max. hydr. capacity 342,000 cubic meters/day. In addition, supply, installation, testing and placing in operation of **two complete chlorination stations** at river intake, 50km downstream of treatment plant. Tenders will be based on transactional regulation of Iran Plan Organization. Completion time 37 months. Tender documents may be purchased until May 5 from Technical Bureau of EWSB, Hezar Kjerib Chahar Bagh-Bala, Pasargad Ave., Esfahan. Postal address is P.O. Box, Esfahan, Iran, cable: ABFA. All bids must be submitted by July 7. Cost of bidding documents 100,000 rials. Additional information available from Andras F. Behr, 202-377-4441. OPIC.

IRAN—Private firm wishes to construct **200-500 prefab houses** in area of Bandar-I-Pahlavi on Caspian Coast. Would prefer to purchase entire factory for construction with technical assistance in construction and assembly, but would consider investment ($250,000 up) in joint venture or purchase of complete units under L/C with exclusive distributorship for Iran. Interested U.S. firms contact Reza Milani, Owner/Mgr., Milani Co., P.O. Box 37, Bandar-I-Pahlavi, Iran, telephone: 02321-3772, telegraph: REZA MILANI BANDAR-I-PAHLAVI. Additional information available from Andras F. Behr, BIC/CAGNE, U.S. Department of Commerce, Washington, D.C. 20230; 202-377-4441.

Visiting Buyers & Officials

SWEDEN — Businessman visiting U.S. this month, seeks contact with American suppliers of **hickory, suitable for skis and tool handles.** For further information contact Jim Nader, 202-377-3265.

AUSTRALIA — Businessman will visit U.S. April 17-May 1 seeking contact with U.S. suppliers of **plastic cattle ear tags and other veterinary and pet supplies.** John Baldwin is managing director of V.S. Supplies Ltd., largest distributor/importer of veterinary products in Australasia. Head offices are in Melbourne, with branches in Sydney, Brisbane, Adelaide and Tasmania. Company's working capital is U.S.$1.3 million, annual sales U.S. $6.5 million. Now imports mainly from Europe, but actively seeking to increase imports from United States. American firms may contact this buyer through Shelley Berlin, U.S. Dept. of Commerce, Foreign Buyer Program, Room 2322, Washington, D.C. 20230.

AUSTRALIA — Businessman will visit United States for six weeks beginning April 24, seeking to contact U.S. suppliers of **mountaineering and camping equipment.** Rick White, representative of Mountain Experience Co., Brisbane, plans to visit San Francisco, Los Angeles, Yosemite and Denver. Contact this buyer through Rick White, P.O. Box 150, Ventura, Calif. 93001.

NORWAY — Pollution control officials from Oslo will be visiting the United States in early April for purchase of **oil spill prevention and cleanup equipment.** U.S. firms interested in meeting these visitors contact Annette Napper, U.S. Department of Commerce, Foreign Buyer Program, Room 2322; 202-377-3265.

SWEDEN—Businessmen visiting U.S. in early April, seek contact with manufacturers and suppliers of **packaging machinery for pulp and paper; dust collection and air purification equipment; industrial gas cleaning systems; process control instruments; fluid meters and counting devices; instruments to measure electricity; gaskets and pressure strainers (simplex and duplex).** Contact Jim Nader, U.S. Department of Commerce, Foreign Buyer Program, Room 2322, Washington, D.C. 20230; 202-377-3265.

AUSTRALIA—Firm sending representative to U.S. to seek contact with manufacturers interested in agency/distributor agreements. Product interests are **XY recorders and UV recorders—servo test equipment; phase angle voltmeters; angle position indicators; S.D.-D.S. converters; A.C. ratioboxes; microwave test equipment; signal sources, generators, attenuators, spectrum analyzers, amplifiers, components, both commercial and military.** Firm specializes in supply of equipment for research, industry and educational establishments. Has 25 years of experience in product area. For further information contact Jim Nader, U.S. Department of Commerce, Room 2322, Foreign Buyer Program, Washington, D.C. 20230, 202-377-3265.

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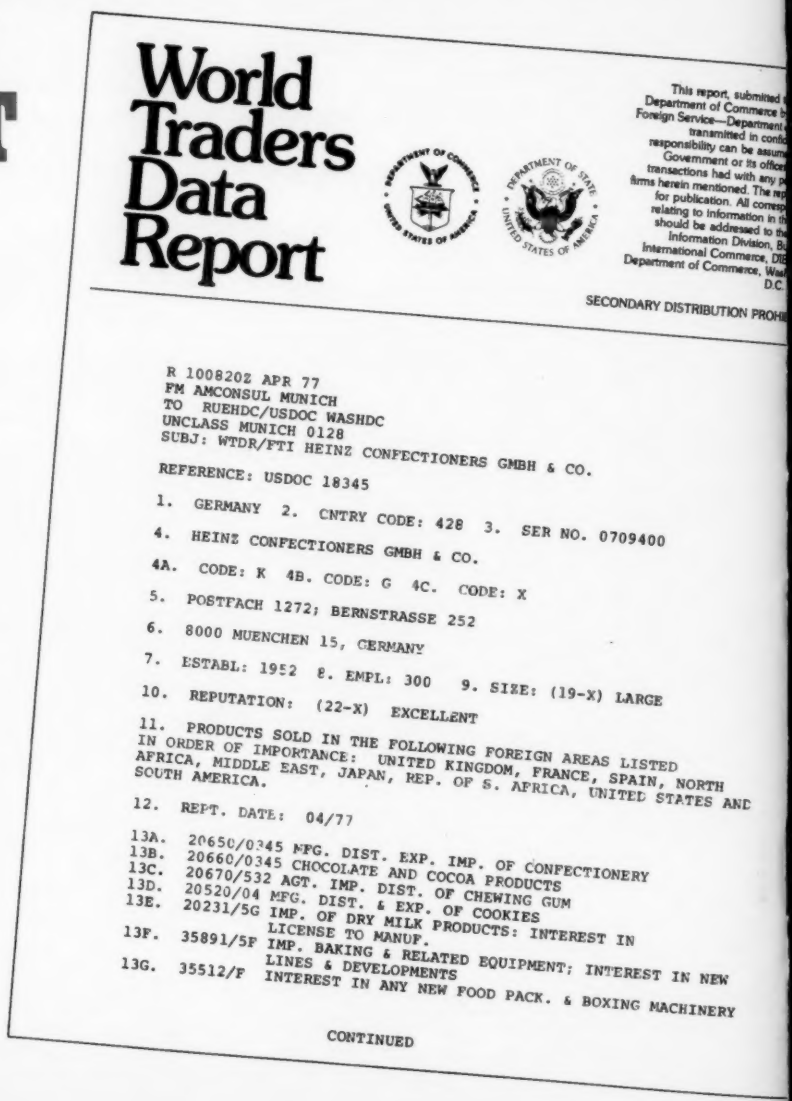

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